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Vol. XII, No. 1.


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"Three teaspoonfuls of cod-liver oil will never be replaced by three teaspoonfuls of cream or other fat."—Dr. A. Jacobi, *Therapeutics of Infancy and Childhood*, 3d ed., p. 127.

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*PULMONARY TUBERCULOSIS, AND WASTING*  
*DISEASES OF CHILDHOOD AND DUR-*  
*ING CONVALESCENCE FROM*  
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## 1906.

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# Vermont Medical Monthly.

VOL. XII.

JANUARY 15, 1906.

NUMBER 1.

## ORIGINAL ARTICLES.

### THE GENERAL PRINCIPLES OF ALKALOIDAL MEDICATION,

#### What It Is and What It Offers.\*

*By W. C. Abbott, M. D., Chicago.*

Six years ago, when I addressed the American Medical Association on this topic, I endeavored to clear up some of the mistaken notions then extant concerning the meaning and scope of this new therapeutic movement. At that time it was looked upon with suspicion, as being possibly a new sort of homeopathy, or a sect that was to appeal to the public, ever ready to run after each novelty to take from the doctor another portion of the slender field left us by the all-pervading quack be he an advertising liar called "Doctor," or a rum-remedy vending, prescription-refilling, counter-prescribing, ycleped druggist; for while there are good men in both professions, neither is free from its parasite.

Thanks to the care with which the movement has been held strictly within the lines of regular medicine this fear has largely subsided; but even yet there are many mistakes made as to the real gist of the movement, hence I again come forward to explain it, to place it upon an open page for your inspection.

Active-principle therapy is the most ethical of methods. Its materia medica is absolutely open, free and untrammelled. Every pharmacist—manufacturing, jobbing or dispensing—every physician even, if he can, is free to gather and treat the plants, extract the alkaloids and dispense them as he pleases, without paying royalty to any human being. Any physician who can gather an armful of henbane may, if he can and will, prepare from it his own hyoscyamine and hyoscine. There is no secret, but knowledge and skill, as to the making of any of these remedies and none certainly as to their uses. The only claim

any manufacturing house can justly make in regard to them is as to the superiority of their pharmacal methods—a perfectly legitimate and laudable point in business competition.

The purveyors of these agents place them in the hands of the medical profession as the tools of their trade and it is up to the doctor to use them as he deems best. There is no effort at dictation, no urging the physician to abdicate his function as the prescriber of what he considers the proper treatment, insisting that he must take others' ideas instead of his own—simply this, a set of finely made tools is placed in his hands to do with them what he deems best.

I am thus particular in defining this position, because the movement had been decried by its critics as being simply commercial, one cunningly hidden under a professional propaganda. This is putting the cart before the horse. It is absolutely necessary for this work that there should be a source of supply for the remedies advocated where they may at all times be obtained of strictly standard quality. How could we possibly advocate the use of strophanthin, and send the men who desired to put our assertions to the test into the open market for an article that varies in strength from one to ninety as found in the shops? As I have said, every pharmacist can, if he will, supply these agents of standard quality—whether he will do, and does so, or not is open to question. What the doctor must have is absolute uniformity, so that a granule or any fixed amount of such a drug as aconitine, for example, is exactly as strong as every other granule of that substance, whether purchased today, ten years ago, or ten years hence; and this is what we mean by "standard quality"—a standard source of supply where product does not vary.

My next point is, the scientific basis for the application of these remedies. Years ago, when the great therapeutic experimenters commenced their work of studying the physiologic effects of plants, metals, etc., they began with the tinctures and other preparations made, in each instance, direct from the crude

Read at the annual meeting of the Vermont State Medical Society, Burlington, Oct. 12-13, 1905.

thing itself taken in its entirety. At once they were thrown out of their reckoning by the variability of these agents, by the uncertainty of the forces with which they were at work. Of what use was it to try to record results from a tincture, when every fresh specimen showed certain differences as to the nature and amount, the quality and quantity of effect, a difference due to the varying amount of the active part of the drug present in each instance.

Surely nothing of a precise and conclusive nature could be obtained from such variable agents. Let me illustrate: A pharmacist was accustomed to take the residues of his extracts and tinctures remaining in the bottles when a new supply was prepared, and empty them into a large bottle which he labeled with some fancy name and dispensed the contents as a "liniment for internal and external use." In time this came to contain traces of every drug in the shop, but no two bottles from it were ever quite the same. No mortal man could possibly predict the effect of its application or internal administration—but I know of regularly educated physicians who prescribed it! At best, the effects of any preparation of plants containing such a veritable storehouse of conflicting agents as jaborandi or opium, were a matter of chance, and anything like certainty in applying them was impossible. Even when the results could be predicted, to a fair degree of probability, as to their nature, the question of the relative strength of the medicine came up again when each new specimen was received.

This constant uncertainty, in the presence of a better knowledge of pathology, better methods of diagnosis and a closer appreciation of results led to a period of nihilism in medicine, the sentiments of some of the leaders in which were expressed as follows:

Dr. Evans, F. R. C. P., London: "The popular medical system is a most uncertain and unsatisfactory system. It has neither philosophy nor common sense to commend it to confidence."

Marshall Hall: "Let us no longer wonder at the lamentable want of success which marks our practice, when there is scarcely a sound physiological principle among us."

Valentine Mott: "Of all sciences medicine is the most uncertain."

Sir Astley Cooper: "The science of medicine is founded on conjecture and improved by murder."

Prof. A. H. Stevens: "The older physicians grow, the more skeptical they become of the virtues of medicine, and the more they are disposed to trust to the powers of nature."

Wakley (Lancet): "A system of routine or empirical practice has grown up, vacillating, uncertain, and often pilotless, in the treatment of disease."

Prof. B. F. Parker: "Instead of investigating for themselves, medical men copy the errors of the predecessors, and have thus retarded the progress of medical science and perpetuated error."

Gentlemen, the harm done to medicine by this period of therapeutic uncertainty is beyond calculation—rendering us timorous and vacillating in our medication, when only by decision and active, well-directed intervention should an emergency be met! This is what, dashing the high hopes of our callow youth, raises in their place impotent skepticism! This it is that replaces the buoyant warmth of optimism with the chilling frost of pessimism. This is what evolves the vaunted, progress-impeding pitiful therapeutic nihilism of today. As I wrote these lines, there came to me a striking example of the evil I am describing—a letter from one of the most prominent educators in the South, telling me he "is completely disgusted and disheartened with his therapeutics, and asking if I can really put him in touch with something better!" All honor to the man who can keep his faith in the goodness of the Creator, and the possibilities of good in His creation of medicinal agents, after such discouraging experiences, during a long professional career. I only regret that the seal of confidence forbids my disclosing his name.

While all this is true under the old methods and while nihilism, by reason thereof, is perfectly natural, no one need longer be a medicinal nihilist, for with the certainty of the active principle came the possibility of a certain therapy, and with certain means and a certain method it is easier to succeed than to fail.

I will mention a few of the advantages accruing to the use of the active principles: Consisting of the naked remedy without encumbering debris, they are quickly absorbed,



the effects follow speedily; the dose is smaller, the absence of disagreeable plant elements renders the medicines much pleasanter to the taste; children take them as readily as they do the pellets of the homeopathist. A curious illustration of this occurs to me. I had employed the alkaloids for some time with a family long under my care, explaining to them fully the nature of the new agents. Bidding them farewell on my removal from their neighborhood, they testified to their regret and added that "my services had been especially appreciated since I had employed the homeopathic system!" Explain ever so clearly, people retain their own impressions, impressions made up largely from taste, and sight, and smell, but not wanting in appreciation of results produced.

Now I come to a more important matter. Hitherto we have spoken of the qualities that render the alkaloids superior to the older galenic preparations; but were one to think that this is a mere question of such superiority he would fail to appreciate the real meaning of the active-principle movement, a movement embodying in its essentials nothing short of an absolute revolution in therapeutics. Free from uncertainty of action, the alkaloids and other definite active principles may always be depended upon to produce unvarying physiologic effects, therefore, when thoroughly known and properly applied, they become veritable physiologic specifics, as to expression by symptoms, the only tenable possibility in specific medication—specific (in dose enough) as to physiologic effect, but by no means as to disease treatment. Being definite in chemical composition and uniform in physiologic action, their effects upon existing symptoms are to be anticipated; may be foretold by the physician and watched for and recognized by the attendants.

Whatever belladonna may do, atropine always manifests the first evident action by inducing dryness of the mouth and throat. Knowing this, we look for it, instruct the nurse to watch for it, and suspend the remedy when the dryness commences. So with the other alkaloids. Each has its regular sequence of effects, by which we learn to regulate its administration. This is our first foundation stone, the first bit of firm ground on which we can rest our feet and upon which is being rapidly erected a statue of liberty

—of medical certainty—to enlighten our therapeutic world.

From this it follows that, knowing the effects to be derived from a remedy, we look out for the indication for that remedy in our cases. Knowing that veratrine relaxes vascular tension, we recognize in vascular hypertension an indication for the administration of veratrine, and whenever we meet this symptom in any case of any disease, be it the usual first symptom of an acute pneumonia, or uremia or rheumatism, we give this agent in dose enough until the abnormal tension has been reduced—not slowly, timorously, or for so-called alterative effect, but with a rush till by the very dynamic force of the dose we cumulate (dose enough) the physiologic effect we desire has been produced. And then? Then stop and repeat as needed or continue in sufficient dose and frequency to maintain the effect produced or such part of it as the physician may desire. The great triumvirate of successful practice, possible only to active-principle therapy, being: know what to do, know the right expedient medicinal or otherwise to produce the effect desired, and then apply it. Do it now. To effect: Dose enough.

Each new principle we study adds one more to our list of positive remedies for which we look for corresponding distinct, symptomatic conditions in our patients. Does this seem trivial to you? On the contrary it is momentous, for in this manner we are shifting the whole base from which we are attacking the enemy, disease. We are no longer prescribing for pneumonias and typhoid fevers, but for conditions of abnormal vasomotor tension, disturbances of the heat and blood supply, for the symptoms produced by toxic elements in the blood, for disturbed functions of various organs or tissues, or for the same variously combined as the case may be. The making of a diagnosis, as to the name of the disease, is no longer requisite before we descend to the question of therapeutics; in fact, it is quite inconsequential. We begin to treat as soon as we recognize a departure from normality in any sense, and if the opportunity is given, and if our sense of perception is sufficiently acute and our movements quick enough and sufficiently forceful, the pending organic lesion is prevented, the symptoms disappear and the diagnosis of the malady, in so far as its naming is concerned, may or may not

follow—it is not essential, for the patient is well, the disease has been aborted.

Heresy! He is decrying the sacred name of diagnosis! Gentlemen, I am not decrying or undervaluing diagnosis—not one iota! No man, more persistently than the speaker, has insisted upon the necessity of thorough investigation of cases, of going over the patient, as I have often said, as with a fine-toothed comb, in an endeavor to ascertain every possibility to be learned about it. But there be those who have made an idol of diagnosis, even so far as to neglect their more important duties, stopping with the diagnosis despite the fact that the patient does not come to us (and pay us) for a diagnosis, but for a cure, for relief at all events, in fact for treatment. It would be a nice legal question whether the nihilistic gentlemen who stop at a disease-diagnosis and give no treatment except possibly a placebo, could collect their bills in the courts were they to acknowledge the truth of their practice in this matter. And we like to collect our bills, and to collect them with the conscientious feeling that we have earned the money.

As a side effect of this movement, we note the growing and most desirable tendency to abolish that time-honored humbug, the orthodox prescription with its principium, its adjuvans, its corrigent and its exceprians; and the books of formulas as well are being sent to the scrap-heap. No longer does, or should, the physician copy the formulas of medical "great-men" for the treatment of pleurisy, Bright's disease, etc., for diseases, as such, are rarely susceptible to treatment—it is the conditions presenting in each case that we are to treat—and they are frequently contradictory, even in the same case. A prescription is to be made at every visit, to suit the case, then and there; and it may consist of a single remedy, if but one is indicated, or of a dozen if the physician sees good reason for administering that many.

But this is certain, that the scientific, modern physician gives but a single remedy for a single indication, and selects that one which most nearly meets that indication. He does not give a whole group of remedies in the hope that some one of them may hit the need. One remedy is enough if it be the right one—and no other should be given except the right one. One remedy for a condition may mean

but one in the prescription, or it may mean several remedies if there are as many conditions requiring immediate treatment, leaving the cell, through its power of selection, to take and use that which will modify the error of condition possessed in itself.

The ancient prescription is therefore replaced by one constructed on scientific principles, easy to put together and requiring no effort of the mind to memorize. We hear examining boards asking candidates for the formulas of compound cathartic pills, paregoric, Huxham's tincture, brown mixture, etc. I would reject any man who had charged his memory with such useless lumber.

In the meantime we have returned to the simple theories and the optimistic prognoses of our ancestors, in respect to acute diseases and to their treatment, but with better and surer agents. We believe in the possibility of aborting various acute attacks by striking quick and hard at the vasomotor disequilibriums that mark the initial stages of inflammations, but we have in veratrine and aconitine better and far less objectionable remedies than bleeding, leeches, cups, blisters and poultices. We have vindicated the correctness of their clinical observations and have applied their theories with modern forms of medication. For the first time the problem of dosage has been solved, by the administering of small and rapidly repeated doses until the desired effect has been secured—doing away with all the complicated objections to the level or fixed dose described in our textbooks.

The results of this revolution are that a new and better method has developed. The physician becomes a closer observer, a prompt and vigorous therapist—a great "mixer." His objects are necessarily clinical rather than purely scholastic; he gets to work promptly, when disease is yet young and tender—before structural lesions have supervened on the primary vasomotor disturbance; he becomes a close observer of the phenomena of disease and the effects of medicines; and while his diagnoses may seem to be weak, he knows a whole lot more about what is going on with his patient than the long-on-diagnosis, short-on-treatment crank does. He may be in doubt as to the classification of a case as pneumonia, or pulmonary hyperemia aborted, but you need not fear that his patient may die from a two-grain dose of strychnine in his



hospital without its being suspected, or because therapeutically he does not know what he is about.

My last point is perhaps the most important of all: The transition from the old method to the new is only difficult before its beginning. It seems a good deal to ask a man, who has grown old in the practice of medicine, to drop his ancient methods and adopt an entirely new one, but in fact it is more than easy—it is the rolling off a burden we have borne so long that we had lost consciousness of it. Who has not felt himself hampered by the supposed necessity of waiting 'til his diagnosis was made before beginning treatment, to find that, when satisfied, the time for effective intervention had elapsed? Throw off an unnatural, cramped system and adopt a natural one, and after the first few efforts you will find that the new one comes easy; and in a few months you can scarcely realize that you worked in the old way so long.

This whole address sounds optimistic, enthusiastic, extravagant, to you, but that is just what the certainties of active-principle therapy permit you to be! It seems so to you, it did to me; it must to anyone. We expect you to come to the trial of these matters with distrust, with the skepticism born of many attempts ending in disappointment. That does not worry us; we are ready for that and welcome all the lack of faith you can manifest—if you only make the trial—we are then sure of a recruit. For the principles of active-principle medication are those of scientific therapy; they mark the disappearance of empiricism and the foundation of medical practice upon rational grounds; the breaking away from purely technical scholastic methods and the return to nature, in our studies of her great book, instead of blindly perusing and following with too little personal thought the textbooks of the schools—the magister dixit of medical Rip Van Winkleism. The patient is our study, the sick-room is our laboratory, and active-principle therapy with all its delightful certainty our possibility.

Silicate of soda, or water-glass, forms one of the very best substances to use as a rigid dressing. The addition of powdered chalk to it will stiffen it further if needed.—*Clinical Reporter*.

## INIENCEPHALUS.

By Maud S. Abbott, M. D.,

*Assistant Curator, Pathological Museum McGill University; and*

*F. A. L. Lockhart, M. B., Etc., Edin.; M. D., McGill,*

*Gynecologist to the Montreal General Hospital and to the Protestant Hospital for the Insane, Verdun; Lecturer in Gynecology, McGill University, Montreal; Professor of Surgical Gynecology, University of Vermont College of Medicine.*

(Continued from Page 280.)

17. In Remfrey's<sup>18</sup> case the fetus is a dead-born female. During delivery (which was a footling) the cord, which only measured two inches in length, broke. The face looks upward and the head is tilted so far backwards that scalp and buttocks are flush with one another. On the right side, and projecting over the crest of the illium, is a sac which is collapsed and from which exudes brain matter. The chief flexion is at the occipito-atloid joint. The occipital bone is poorly developed and covers such an extent of the spine that it nearly touches the iliac crests and the right gluteus maximus arises from it. The body has a flexion towards the right side.

The diameters are:

Fronto-mental	.....	2¾ in.
Bi-mastoid	.....	2¾ "
Forehead to buttocks	.....	4¾ "
Bi-trochanteric	.....	2⅞ "

The liver is large and irregular in shape, having a pedunculated mass the size of a cherry projecting from the lower edge. The tabular part of the occiput is represented by a crescentic plate on each side, attached to the posterior margin of the parietal bone and separated from its fellow of the opposite side by a wide opening, the floor of which is partly formed by the spine. The other cranial bones are normal. The spine curves first forwards and then abruptly backwards so that the last vertebra is only one inch from the posterior margin of the left parietal bone. It also curves towards the left. The ribs are irregularly developed, being more or less fused together.

18. Case from Rush Medical Museum. The fetus is a female measuring:

Head to foot .....	10 $\frac{3}{8}$ in.
Head and body .....	5 13-16 "
Trochanter to sole ....	Left 5 $\frac{3}{8}$ "
	Right 5 $\frac{1}{2}$ "
Acromion to finger-tip.	Left 6 "
	Right 5 $\frac{7}{8}$ "
Coccyx to cranium .....	29-16 "
Bi-temporal .....	2 13-16 "
Mento-bregmatic .....	3 9-16 "
Occipito-frontal .....	3 $\frac{1}{4}$ "
Bisacromial .....	2 $\frac{7}{8}$ "

The toe-nails were less than half way out to the tips of the toes and the finger-nails less than three-quarters. The chin was flush with the sternum and there was double talipes. The usual tilting backwards of the head and foreshortening of the back were to be observed, while the face looked forwards and a little to the left. In the median line of the back there is a soft tumor covered by membrane through which can be felt a cleft in the spine. The tumor measures  $1\frac{1}{4} \times 15-16$  in. and occupies most of the dorsal region. Protruding from the bony defect in the skull to the right of the median line and hanging over the right shoulder is another soft tumor covered by skin from the anterior third of which grow hairs. This is an encephalocele and measures  $2\frac{3}{8} \times 2\frac{1}{4}$  inch. Under the skin, the lateral tumor is enclosed in a double sac, the outer part adhering to the skin (dura) and the inner being free. Through an incision in the latter, disorganized brain-matter escapes. The cavity is continuous with that of the cranium through the bony defect. In dissecting the dorsal tumor, numerous fibers of the spinal cord and nerves, these being adherent to its under surface, are cut. The parietal bones are of equal size, their apparent inequality being due to the twisting of the head to the right side of the back. The opening in the cranium through which the lateral tumor escapes is between the rudimentary squamous plates of the occiput, which in the form of acute triangles, articulate with parietals at the lambdoidal sutures and with the basilar part of the occiput at the base below on each side. The margins of the foramen magnum lie flat upon the spinal column and are ligamentously attached to the rudimentary laminae of the widely open vertebrae. Thus the occiput covers the spinal canal, causing foreshortening of the back of the fetus. The base of the left lateral occipital plate covers the spinal canal in the lower

dorsal region just anterior to the dorsal tumor. At this region, the transverse processes of the vertebrae are better developed and approximate each other more closely than elsewhere and are connected by strong ligaments. The spina bifida is complete to the tip of the coccyx and the canal is flattened. The compressed fibers of the cord and the nerves from it lie in the canal, and, in the region of the dorsal tumor, are spread out over the inner surface of the latter. This tumor also contains a sac filled with clotted blood and, with its pedicle, passes up through the constricted portion of the spinal canal under where the left lateral occipital plate touches the dorsum. This sac is a myelocoele. Lordosis of the cervical and kyphosis of the lumbar vertebrae are present, and the axis of the spine is turned to the right in the dorsal and cervical regions.

19. Hull's<sup>19</sup> case. A defective brain lay almost entirely outside of the cranial cavity on the back of the neck. There was a spina bifida from the neck to the sacrum. The squamous portion of the occiput was absent and the frontals and parietals were small and depressed. Three ribs were fused and talipes was present.

20. Gros'<sup>20</sup> case. The mother was a primipera and the labor was complicated by intestinal disturbances. Slight hydrannios was seen. There was no occiput and the parietals were small while a large cerebral tumor lay behind the cranium. A spina bifida was present in the cervical region. The mouth was divided into two parts by a horizontal band.

21. Budin's<sup>21</sup> Case. The fetus was a female which weighed 750 grams. A large tumor was present at the posterior part of the cranium, arising below the superior angle of the occiput and descending almost to the sacrum. There was hair on the anterior surface of this tumor. Between the skin and dura, there was quite a quantity of fluid, as also in the sub-dural and arachnoid spaces. The tumor also contained the cerebral-hemispheres. The cerebellum was in the right occipital fossa within the skull and on top of the medulla and part of the spinal cord. There was a bony opening in the cranium bounded by the occiput and the cervical and upper six dorsal vertebrae. The cervical vertebrae formed a deep curve with its concavity directed posteriorly. The squamous part of the occiput was rudimentary, consisting of plates at the



sides of and above the cranial opening. The basilar and rest of the cranial bones were normal. The thorax was pigeon-shaped on account of the anterior curve of the spine. The head was tilted back with a corresponding foreshortening of the dorsum.

22. Roger's<sup>22</sup> Case. An excessive amount of liquor amnii was present and the child, a female, weighed 8½ lbs. At the basis cranii was a soft tumor as large as the head. The back of the child was soft and no vertebrae could be felt at the lower part. The first cervical vertebra articulated with the sphenoid or detached basilar portion of the occiput; thence the spine descends to the level of the manubrium sterni, where it turns backwards and upwards and terminates with a short downward curve between the spines of the scapulae. There is no bony column between this and the sacrum. The inferior part of the occiput does not articulate with any other bone but curves upwards into the cranium, leaving an opening into it. There are no articular condyles on the occiput. A hard tense swelling, containing intestines and brown gelatinous fluid, occupies the lower abdomen down to and continuous with the labia majora. The anus was imperforate.

23. Bonnair's<sup>23</sup> case. This fetus was one of twins, its fellow being normal. The amnion of the monster was very dropsical. Its face, composing the chief part of the head, looked upwards and was set so deeply between the shoulders that the ears touched the acromion. The chin and sternum were continuous and the spine was so curved that it gave the body the appearance of being greatly shortened and the limbs an apparent elongation. Behind the head, an encephalocele extends as far back as the lumbar region, having its anterior third covered with hair, the rest with membrane. The spina bifida is complete and contains the flattened cord. The frontal and parietal bones are rudimentary. The occiput contains a large opening and its basilar portion is in two lateral pieces. There is complete splitting of all the cervical and upper ten dorsal vertebrae, forming a Y with the rest of the spinal column. The cervical parts of the Y curve sharply backwards so as to almost touch the atrophied dorsal vertebrae. Below the cord, a hernial pouch, containing part of the esophagus, projects through the fissure in the vertebrae. Lewis has found two

cases where this splitting of the upper part of the spinal column complicates iniencephaly.

24. Ballantyne (Edin: Obstetrical Soc: Trans: Vol: 24) showed at the Edinboro Obstetrical Society in 1899 frozen sections and photographs of an iniencephalic monster. The fetus was a small male. The head was sharply flexed backwards upon the trunk; the basis cranii looked directly backwards; the cervical spine showed marked lordosis with compensating kyphosis in the dorso-lumbar region together with some torsion. The cranial vault was defective in the region of the posterior fontanelle, allowing the cerebrum to project into a sac which lay on the back of the fetus. The cartilagenous part of the occipital bone was directed downwards, leaving in front of it a very large foramen magnum, in which lay the cerebellum and spinal cord. The bladder contained colorless urine and in the dorsal sac was blood clot and cerebral substance, the sac probably having ruptured during labor.

25. Evans' Case. This specimen is in the pathological museum of McGill University, Montreal. The fetus is a small female, showing marked retroflexion of the head, so that the occiput merges into the back at a point 4.25 cm. above the anus. The face looks almost directly upwards, its longest diameter running from the occiput to the upper lip. The fetus measured 39 cm. in length. The other measurements were:

Anus to base of nose.....	14.25 cm.
Occipito-frontal .....	9 cm.
Occipital-mental .....	9 cm.
Sub-occipito bregmatic .....	8 cm.
Bi-parietal .....	9 cm.
Bi-temporal .....	8.5 cm.
Fronto-mental .....	6.25 cm.
Circumference of head at level of O. F. diameter .....	28.5 cm.

The face is well formed and the head well covered with hair, which is dark and extends very low on the forehead but not abnormally low at the sides. Behind, this hair stops abruptly at the junction of the occiput with the back. The anterior fold of the neck is obliterated by the retroflexion of the head. Both ears are abnormal in form. The extremities are flexed closely upon themselves and there is a left talipes varus. In the middle line of the back just below the occiput is a round, bluish-red elastic nodule the size of a bean,

indicating a spina bifida. No skiagraph could be obtained owing to the saturation of the specimen by the mercurial solution in which it had been kept.

26. This specimen was presented to McGill Pathological Museum by Dr. Dewar of Ottawa. The mother was the subject of rickets and cerebral syphilis. She gave birth to a full term female fetus of large size, measuring 33.5 cm. from the heel to the middle of the anterior fontanelle. The head is retroflexed, the occiput, just below the posterior fontanelle, becoming continuous with the back in the intra-scapular region 8.25 cm. above the anus. There is also slight lateral flexion of the trunk to the right. The arms are in extension and the lower extremities are flexed upon themselves. Through the retroflexion of the head, the fold of the neck anteriorly is completely obliterated. The face looks obliquely upwards, the anterior fontanelle upwards and backwards. The facial expression is natural and the head is covered with thick black hair, which grows far down laterally below the ears to the shoulders, running particularly low on the left side where it reaches the level of the scapula. On this side, a strip of scalp about 3 cm. wide on a level with the forehead is quite bare of hair. The ears are placed low down near the neck, and the left one is slightly anomalous in form. The diameters of the head are:

Occipito-frontal ..... 10.25 cm.  
Occipito-mental ..... 11.00 cm.  
Sub-occipito bregmatic ..... 9.00 cm.  
Bi-temporal ..... 8.00 cm.

The trunk is very well nourished. In the middle line of the back, about 2.0 cm. below the occiput is a small tuft of hair; about 2.5 cm. below this is a dimple and at a similar distance lower down, just a little way above the coccyx, is another depression, slightly deeper than the first. The anus is perforate. The lower part of the thorax and the abdomen are prominent and rounded. There is an umbilical hernia about the size of a walnut. It is a soft reddish-brown mass of tissue and is elastic as though it contained fluid. The cord arises from this mass. The upper extremities are normal and the nails are well formed. There is a marked talipes equinovarus of the left foot and a slight one of the right foot. On the toes, the nails are rudimentary. In the skiagraph, the basis cranii is

seen to be high up and the occiput to be adherent to the bodies of the vertebrae in the lower dorsal region. There is a lordosis of the lumbar and lower dorsal regions.

27. The author's specimen was given him by Dr. A. R. Griffith, Montreal, in whose practice the case occurred. The mother is a healthy 2-para, 27 years of age. Her last child was only 11 months old when this monster was born and it had been nursed for nine months. Both of the previous children were healthy and well formed and there was no history of any malformation having occurred among any of the parents' family connections. Nothing unusual had been noted in connection with the pregnancy and the presentation was normal. Delivery was natural and easy. There was a very large amount of liquor amnii but the placenta was rather small. The measurements are:

Occipito-frontal ..... 9.25 cm.  
Occipito-mental ..... 10.00 "  
Bi-temporal ..... 6.5 "  
Bi-temporal ..... 6.5 "  
Vertex to heel ..... 29.00 "  
Head and trunk:  
Length ..... 16.00 "  
Circumference around  
shoulders ..... 34.00 "  
Occiput to anus ..... 5.00 "  
Cord to base of penis ..... 2.50 "  
Shoulder to finger-tip ..... 16.00 "  
Fold of thigh to knee ..... 7.00 "  
Fold of thigh to external  
maleolus ..... 10.00 "

A condition of double talipes exists. Inspection of the cord shows no abnormality until a transverse section is made when the artery is seen to be accompanied by only one vein. The child is retroflexed upon itself and rotated to the left upon its vertical axis so that the face looks slightly upwards and to the left. The eyes, mouth, and nose are well formed and the ears are deepset but symmetrical. The whole head is covered with dark hair which has the usual distribution, except that it extends abnormally low on each side posteriorly. The anterior neck sulcus is obliterated except just in front where there is a small submental hollow. Posteriorly, a globular swelling, cystic in character, extends from the anterior angle of the posterior fontanelle to the middle of the back and on either side as far as the middle line of the neck. This



mass gives the head an ovoid shape, the long diameter of which runs from left to right with an inclination slightly backwards and downwards, owing to the left lateral flexion of the spinal column. No sign of an abdominal fissure can be observed anteriorly, but posteriorly, immediately below the cystic swelling, is a spina bifida which measures 3 cm. in length and .12 cm. in its broadest part, which is above. This fissure is covered by a thin whitish membrane which extends further out on



Author's Case, No. 27.

(Anterior)

the right side than on the left. The spina bifida extends as low down as the 2nd lumbar vertebra, while from the 11th dorsal up it forms the floor of the cranial cavity. On the left side, the occiput is attached by ligaments to the transverse processes of all of the cervical and upper six dorsal vertebrae, while on the right side the attachment extends down as low as the 10th dorsal.

On opening the abdomen, the liver is seen to be larger than normal and to be displaced downwards. It is attached to the anterior abdominal wall by a thin velamentous mem-

brane, the other hepatic ligaments being normal. The left lobe is decidedly the larger of the two. The heart contained a patent foramen-ovale but was otherwise normal. The kidneys were represented by a horse-shoe shaped kidney, lying across the spine, with the two ureters running from it to the bladder.

Dissection of the scalp showed the anterior and posterior bellies of the occipito-frontalis to be well developed and to be united by fascia over the vertex while the posterior portions lost themselves over the coverings of the nontencephalocoele. This latter formed a bi-lobed swelling, the larger of the two (the right) being about the size of a tangerine orange and the smaller that of a large walnut. The sac was covered by a thin, tough, fibrous membrane directly continuous with the periosteum covering the bones of the cranium and but slightly adherent to the duramater beneath. This latter structure formed the wall of the sac which protruded from the cranial cavity. The sac contained thin chocolate colored fluid (two ounces) in which was apparently the cerebrum, the convolutions of which were fairly well marked although flatter than usual. On opening up the cerebrum, the ventricles were seen to be widely dilated by an internal hydrocephalus, the brain-substance remaining about  $\frac{1}{4}$  inch thick around these cavities. Removal of the cerebrum showed the foramen in the occipital bone to be bridged across by another fold of duramater which bulged outwards and which enclosed a mass of nerve tissue about the size of a walnut, quite smooth and without any folds whatever. Section of this showed that it contained a large cavity. This mass appeared to be the cerebellum. Contained within the cranium itself, was a large mass of soft gray nerve tissue which was apparently continuous with the medulla. The defect in the occiput is about 2 cm. below the posterior fontanelle, and is apparently an enlarged foramen magnum. All of the embryonic parts of the occiput can be made out along its boundaries.

The spinal canal is open in its whole extent, except at the twelfth dorsal and first lumbar vertebrae, the arches of which are present and form a bony roof to the greatly enlarged vertebral canal, which is thus closed in just before it widens out to form the floor of the altered cranio-rhachidian cavity. The occiput is adherent to the left side of the twelfth dor-

sal vertebra. Owing to the flexion of the fetus on its lateral axis to the left and also to its retroflexion upon itself, a peculiar deformity of the thorax is produced. The ribs on the right side are widely separated from each other, while those on the left are closely jammed together. They are also deflected downwards so that a defect in the bony framework of the anterior wall of the chest results. The defect is much larger on the right side and is bridged across by the first and second ribs, its upper boundary being formed by the clavicle, its lower by the fourth rib. The defect on the left is smaller and is bounded above by the clavicle, below by the upper four ribs which are bound closely together, resembling at first sight one structure. The clavicles are large and strong, having the acromial ends bent sharply down to meet the scapulae and approaching each other closely (within 1 cm.) above the sternum with which they articulate along its upper border.

On the right side, the ribs are as follows: The first arises from the middle of the shaft of the second; it is a small cartilagenous process running forwards and upwards to be inserted in the second segment of the sternum about 2 cm. below its upper margin. The second arises from the second dorsal vertebra; the third as a bony process in common with that of the opposite side in front of the body of the third dorsal vertebra. These second and third ribs unite about the center of their shafts to form a single broad flat bone, from which a single costal cartilage, becoming narrower as it proceeds, passes to be inserted into the sternum just below the attachment of the first. These three ribs form a bridge across the upper third of the defect on this side. The fourth rib arises, with that of the opposite side, as a bony bridge in front and to the right of the body of the fourth dorsal vertebra. It is narrow and curves sharply downwards and forwards, forming the lower boundary of the defect. The fifth is broad and heavy, as are also the remaining ribs, which except for a sharp curve at their origin, run straight forwards. The intercostal spaces are very broad, and there is a thirteenth (supernumerary) rib which is joined at its tip to the twelfth, which latter is very long and broad.

On the left side, the first and second arise from the corresponding dorsal vertebrae; the third and fourth as a bony bridge in com-

mon with those of the opposite side, in front of the bodies of the third and fourth dorsals. All four are bound together, forming the lower boundary of the defect in the left thorax. The lower eight ribs lie close together, are narrow, especially at their origin, and the lower four have grown together, forming a broad, flat, bony process. No supernumerary rib is present on the left side.



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(Posterior.)

28. Lop and Pujol<sup>24</sup> report a case of fetal malformation which is, as far as one can tell from the abstract of their paper which was at my disposal, a case of iniencephaly. The fetus came from the Maternity of Marseilles, from the service of Queirel and Benet. It was a female measuring 23 cm. in length and was delivered in Sept. 1895, in an advanced state of decomposition, the mother being at the fifth month of pregnancy. On each side of the head there was a cutaneous fold, very large, which extended from the vertex to the shoulders and then became lost in the inferior third of the trunk. This skin had great



mobility. While the neck was well formed in front and very distinct in spite of the two folds which masked the lateral parts, in the rear it was entirely wanting, and the occiput was directly continuous with the back. The skin, lax and too abundant, passed from one to the other, forming numerous folds. The



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Dissected, showing opening in occipital bone, interior of skull, lateral rotation of skull to the left, and attachment of the left side of the occipital bone to the lateral processes of the cervical and 12th dorsal vertebrae.

head was in extension and it was impossible to bend it without producing at the same time a flexion of the vertebral column at the middle of the back. The two lateral cutaneous folds,

which have already been mentioned, were formed solely by the doubled skin of an aponeurotic leaf, a continuation of the anterior and posterior aponeuroses and forming on each side an absolutely empty space. In view of the macerated condition of the subject, it was impossible to dissect in detail the muscles of the posterior region, which seemed to us to be profoundly modified, this being easily explained by the extensive deformity of the skeleton of the neck and the upper part of the back. At the level of the external occipital protuberance, the skull was fused to the vertebral column at the level of the seventh dorsal vertebra. There was no trace of articulation but complete fusion of all parts of the vertebral column situated above the seventh dorsal with the inferior surface of the occiput. On the other side anteriorly and always at the level of the seventh dorsal, the spinal column seems to bi-furcate from below upwards so as to form an inverted V, each of whose branches send out a rib from its external face. There were thus six pairs of ribs which seemed to originate at the base of the skull. The distance which separated anteriorly the two homologous ribs was the greater as it rose from the first to the sixth ribs. There was no trace of the cervical vertebrae, except some rugosities echeloned along the base of the skull, which seemed to continue the direction of the spinal column. The cavity of the skull was completely closed. The brain, although much softened, seemed well formed. The cavity of the rhachis was also closed. The bulb presented an exaggerated length; the basilar measuring 27 cm., more than half of the length of the interior base of the skull. The channel of the rhachis opened with the skull cavity into the lower part of this channel, at the level of the seventh dorsal. We did not observe any visceral deformity. This malformation must have been the result of coal-escence, during the first stages of embryonal life, of a part of the rhachidian and cranial cavities. The channel of the rhachis could not form itself posteriorly in the upper part in consequence of its fusion with the occiput. We thus explain the spreading of the first six dorsal vertebrae and the almost complete disappearance of the cervical. The absence of the neck behind and on the sides accounts for suberabundance of integuments and their laxity in the upper part of the body. This de-

formity, if the infant had arrived at full term, would doubtless have been a cause of dystocia by hindering flexion of the head.

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### THE ACUTE DIARRHOEAS OF CHILDREN.\*

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In the few minutes allowed for this paper I shall endeavor to touch upon the chief points in the diagnosis, pathology and treatment of the so-called acute diarrhoeas of children. Diarrhoea is not of itself a disease but rather a prominent symptom of varying pathological

conditions which operate either by increasing the motor or secretory activity of the intestinal canal. The pathology and bacteriology of these conditions are so incomplete as to render any classification on this basis unsatisfactory, hence we may only enumerate the various forms and touch briefly upon the more important.

All diarrhoeas are either acute or chronic. We will discuss here only those which are acute. Acute diarrhoeas may be subdivided into two great classes,—infectious and non-infectious. Of the non-infectious diarrhoeas we find the following forms described:

(a) Mechanical. These result from the ingestion of foreign bodies or coarse foods unsuited to the infant's powers of digestion. Mechanically they press upon the walls of the intestines, causing vomiting, colic and diarrhoea. These symptoms pass off promptly as soon as bowels are emptied, leaving no lesions.

(b) Initative. This form of diarrhoea is closely akin to the first, being practically an intensified condition of that form. It may result from drugs, organic acids, seeds of fruits, etc. This form produces increase of both peristalsis and secretion, and may cause some congestion and catarrh of the bowels.

(c) Nervous. This is an important one and includes the diarrhoeas occasioned by dentition, changes of temperature, various emotions, as fright, surprise, etc. These forms are but slightly influenced by ordinary treatment. Removal of the cause is essential to recovery.

(d) Eliminative. This form occurs in toxic conditions or defective elimination by other excretory organs, as the kidneys. In this entire group of the non-infectious diarrhoeas if relief be obtained early there will be nothing characteristic in the stools only the ordinary forms of bacteria will be present and the food products will be fairly well digested.

The infectious forms of diarrhoea I will treat under the three following headings: Acute mycotic, cholera infantum, ileo colitis.

The acute mycotic form is described by different authors under varying names as: Summer diarrhoea, acute gastro enteric infection, sub-acute milk infection, etc. This is the great summer disease of infants. In this form of disease bacteria or their toxins make their way into the general circulation. Thus a grave systemic intoxication is added, and the most alarming symptoms now depend on the poisons

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which are circulating about the vital centers. These poisonous agents may be introduced from without, with the food or drink, as in milk which has been carried long distances and exposed to street dust. Or, on the other hand, they may be produced in the intestinal canal itself. Any stoppage of digestion occurring, decomposition of the food products will begin, thus forming toxic substances which after absorption produce serious symptoms.

Acute mycotic diarrhoea usually begins with vomiting and diarrhoea, possibly at first merely a mild diarrhoea, as in the non-infectious forms, except that after two or three days, a time when non-infectious improvement begins, the child becomes feverish, peevish, with more frequent stools and evidence of systemic infection as fever, restlessness, rapid pulse, pallor, loss of weight and in severe cases, stupor, delirium or convulsions. With the increase of the diarrhoea we have as added symptoms, great thirst, dry skin and tongue, sunken eyes and fontanelles. A mild attack may last a week, a severe one longer. As the movements increase in frequency they contain mucous and undigested food, especially coagulated casein and masses of fat. They are accompanied by a great deal of gas. In color the stools vary from yellow to brown or green. Microscopically they are found to contain many bacteria, leucocytes and epithelial cells. The stomach may show patches of congestion but it is in the lower part of the small bowel and the colon that most lesions are found. Here we find areas of infiltration together with superficial and deep patches of softening and ulceration in the mucosa.

Cholera infantum, or acute milk infection, are the terms applied to the most severe form of summer diarrhoea prevalent among infants. It is believed by many to have a specific origin but this is yet to be proved. It is a rare disease, when compared to the subacute form, occurring in but 2-3% of the hot weather diarrhoeas according to Holt. It is a disease of the city rather than country and of bottle instead of breast fed infants. The symptoms develop rapidly, vomiting and purging both nearly continuous. After the stomach is emptied the attempts at vomiting still continue. Vomiting is aggravated by taking food or drink of any kind. The bowel movements change rapidly from yellow to green and then

become watery or rice water. They usually have a musty smell and are of a varying reaction, usually being alkaline late in the disease. The abdomen becomes retracted and loss of flesh is very rapid, a few hours making great changes. Features are pinched, face pale, skin cool and rectal temperature at same time high ( $103^{\circ}$ - $107^{\circ}$ F). Thirst is great, at first there is restlessness, which soon passes into coma, sometimes delirium and convulsions.

The disease is of very short duration, from a few hours to three or four days, and may be fatal in six hours. If the patient survives the first two days and the vomiting and purging diminish the prognosis becomes more favorable but convalescence will be slow. The mucous membrane of the stomach and intestines are in a state of capillary congestion with hemorrhagic patches. The contents of the intestine are fluid owing to the excessive secretion. Peyer's and solitary glands are swollen, and the mucous membrane of the entire large intestine is congested. Throughout colon are beginning ulcers, and minute hemorrhages are found in the heart and lungs. The mucous membrane of the intestines is more congested than in the subacute form and there are also more epithelial cells in the stools, but the patients usually die before the ulceration becomes extensive.

Ileo Colitis (Dysentery). This term covers several forms of disease. I shall not however differentiate them and will entirely omit the amebic form. These cases represent conditions having a pathological process more advanced than mere congestion. Here we have increased production of mucous, with inflammation and ulceration involving all the coats of the bowel. The symptoms are fever, tenderness, pain, diarrhoea at first resembling the ordinary dyspeptic diarrhoea but after a few hours showing its special characteristics, viz., frequent small, yellow or greenish stools mixed with mucous, blood and membranous shreds. These are attended by great prostration, loss of strength and weight. Stools are passed with much abdominal pain and rectal tenesmus. There may be as many as twenty or thirty small bloody mucoid movements daily. This disease may be fatal in a few days and even in favorable cases the symptoms remain severe as long as a week, the first signs of improvement being the disappearance of the

blood from the stools, then a diminution of frequency and tenesmus. The mucous persists for weeks.

#### TREATMENT.

In a general way all of the infectious diarrhoeas should be treated in the same manner. The first essential is cleanliness, together with a cool, quiet room and an abundance of fresh air. Early in the disease all food, even breast milk should be withheld. One authority says that every case of cholera infantum fed milk will be fatal. During the first twenty-four hours nothing should be given except a little cold boiled water with the addition rarely, in case of great prostration, of a little brandy or whiskey. If the stomach can retain nothing it may be necessary to give stimulants hypodermatically.

If called early in the case a dose of castor oil will clear the alimentary tract and shorten the course of the disease. When vomiting is severe calomel in small doses assists in checking it as well as in emptying the bowels. Irrigation of the bowels with a salt solution is of value, assisting in the removal of toxic products from the intestines, serving to allay thirst and supplying needed fluid to the tissues. The temperature of the irrigating fluid should be varied as indicated by the patient's condition. If the vomiting continues beyond the first twenty-four hours some authorities recommend washing out of the stomach *once*. After this if the vomiting continues calomel may be given again. Hot packs are of value for the prostration. If vomiting and purging are excessive morphine and atropine can be given hypodermatically, 1-100 grain of morphine and 1-800 grain of atropine for a child a year old. When food becomes proper begin with barley or albumen water together with beef, mutton or chicken broths, either alone or in combination. The feedings should be two or three hours apart and one-fourth to one-half normal amount. Bismuth is of value in allaying the vomiting and tenesmus, also as an intestinal antiseptic. It may be given either in suspension in mucilage or in powder. It should be given in sufficient doses to produce blackening of the stools. Numerous so-called intestinal antiseptics have been recommended but are of doubtful utility.

In preparing this paper free use has been made of the following books:

Diseases of Children, Taylor & Wells.  
Diseases of Infancy and Childhood, Apolik.  
Pediatrics, Rotch.  
Diagnostics of Internal Medicine, Butler.  
Practice of Medicine, Stevens.  
Progressive Medicine, March, 1902.  
Reference Handbook of the Medical Sciences, vol. 3.

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THE HEALTH OF THE ARMY.—Surgeon-General R. M. O'Reilly of the army has submitted to Secretary Taft an exhaustive report on the health conditions of the army. The report says that the enlisted strength of the army as shown upon the monthly sick reports was 58,740, and on the returns of the military secretary 60,139, and calculations are made upon the latter figures. There were 79,586 "admissions to the sick report" during the year, 406 deaths from all causes, and 1377 discharges for disability. The figures, he says, show a steady improvement in the health of the army. The report says that by far the most important diseases affecting the efficiency of the army during the year have been those resulting from immoral habits which caused 16 per cent of all admissions. As to the causes of death, pneumonia advanced to first cause and tuberculosis second.

The report says: "Comparisons with foreign armies show that the highest rate of admissions is in the American army, and the lowest in the Russian. The highest death rate was in the American army, and the lowest in the Prussian. The highest non-effective rate was in the American army, and the lowest in the Prussian. The comparatively high American death rate for tuberculosis is explained by the fact that in the United States army tuberculosis patients are sent to a sanatorium and retained in service for long periods, while in other armies they are promptly discharged."

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In cases in which there is a tendency to ingrowing toenails, the nail should be cut straight across and not trimmed at the sides. A little absorbent cotton or a small strip of tinfoil may be inserted under the nail to prevent pressure upon the subjacent parts.—*Int. Jour. of Surgery.*

## Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the Medical Sciences.*

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B. H. STONE, M. D., }  
C. F. DALTON, M. D., ..... *Managing Editor.*  
H. L. WHITE, ..... *Business Manager.*

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BURLINGTON, VT., JANUARY 15, 1906.

### EDITORIAL.

With the present issue THE VERMONT MEDICAL MONTHLY enters upon the twelfth year of its existence. It was the intention of the present management to change the name of the publication at this time, eliminating from its title anything tending to designate it as a strictly local journal. The developments of the last three months have convinced us that this would be unwise and we have contented ourselves with a slight change in the dress. Our reasons for this decision are several. First—The action of the State Medical Society at its last meeting in awarding to the Journal the publications of the transactions makes the present name especially appropriate and we feel under some obligations to maintain the name in very nearly its present form for this reason if for no other. Second—The Journal is distinctly local and has in the past and must in the future look for its support among physicians who have local interests. We intend to make it a publication of value to any one but with the multitude of journals published

we are fully aware that it must appeal in some especial way to its constituency in order to find a place. We hope and expect to receive hearty support from the physicians of this State and the adjacent States of New York, New Hampshire and Maine but we also hope that the more remote sons of our State and University will find in the VERMONT MEDICAL MONTHLY a journal which will come to them as a friend from home.

The results of the past three months are gratifying to the new management. The subscription list has been more than doubled and the State Medical Society has given us its substantial endorsement. The style of type has been changed so that the reading material has been more than doubled. Our advertising matter has distinctly improved in its character and it is our intention to work toward a high standard in this respect. We trust that our subscribers will cultivate the habit of sending us matter for publication, and will feel perfectly free with criticisms, suggestions and words of encouragement. Part of our aim in undertaking this journalistic venture is an honest desire to encourage medical progress and writing in this locality. The country physician has plenty of experience and sees and treats a variety of cases such as it is the fortune of very few of his more celebrated brothers in the city to see but he is nearly always too modest or busy to tell of these cases. The VERMONT MEDICAL MONTHLY aims to furnish a ready means for such publications and hopes it can do a little toward stimulating such writing. Any case reports or papers will be gladly received and if suitable printed. The Monthly is now published by the Burlington Medical Publishing Company, incorporated, and thus placed upon a sound financial basis. We shall use every endeavor to give you a clean, reliable, ethical and helpful publication during the new year and we invite you to



cooperate with communications and subscriptions.

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We consider ourselves extremely fortunate in securing the active interest and cooperation of the men who have consented to serve as collaborators. They are leading men in their respective localities and represent in an extremely able way the varied interests of the medical profession. It is an honor to us that they are willing to work with us for a common cause.

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The majority of the medical schools of the country report a falling off in the number of students. This cannot be accounted for by any general financial depression and it is not evidenced in the other departments of the universities. We must look for an explanation either in some workings of the law of supply and demand or in the higher standard for entrance to our medical colleges. The first explanation hardly applies more to the medical profession than to the other professions in which we do not see such a decrease. Undoubtedly the continual raising of the standard of medical education is working, as it should, in diminishing the number and raising the quality of the medical students.

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## NEWS AND PERSONAL ITEMS.

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*We desire to make this column of personal interest to all.  
Physicians are requested to send news items.*

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### VERMONT.

News has been received at Bennington of the death of Dr. R. B. Carter at Akron, O., after an illness of several months. Both Dr. and Mrs. Carter were well known around Bennington, where they formerly resided.

The marriage of Dr. Herman D. Bone of the class of 1904, and Miss Bertha Mae Davis

of Wells River occurred at the home of the bride on Christmas day. Dr. Bone is assistant physician at the State Hospital for the Insane at Waterbury.

Dr. H. D. Holton, as president of the Vermont branch of the American National Red Cross, has appointed a membership committee consisting of one person from each county, to solicit and approve candidates for membership in the society.

The State Board of Medical Censors held a meeting in Rutland last month, and forty more physicians who had failed to record their licenses, appeared for examination. Several took the examination in order to benefit by the reciprocal relations with other states.

Dr. Lawrie Byron Morrison, assistant superintendent of the Mary Fletcher Hospital at Burlington, and instructor in histology in the University of Vermont College of Medicine, was married at East Peacham, Dec. 26, to Miss Fannie Stella Rowe, daughter of Mr. and Mrs. Ichabod Rowe of that town. Dr. and Mrs. Morrison will reside in Burlington.

The Vermont State Tuberculosis Commission, with the assistance of experts from other states, after viewing many sites presented as a location for the sanatorium given by Senator Proctor, has decided upon Pittsford as the place offering the greatest number of desirable qualifications. The site selected is about a mile and a half from Pittsford station and comprises a tract of some two hundred acres, considerable of which is very heavily wooded, largely with evergreen trees. It consists of a dry, gravelly plateau dipping at the front steeply some 75 feet to the ground below. It is cut in two by a beautiful, clear stream, has a good view, and is especially well sheltered from the wind. It is peculiarly adapted to the laying out of drives and walks and the building of camps, and has room for all these purposes and for any extensions or growth which might naturally come to the institution. Arrangements will soon be made for the building plans, so that construction may begin in good season in the spring.

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### MAINE.

Dr. Maurice K. Dwinell, formerly in practice at Waterville, died at the Insane Hospital at Augusta, Dec. 15, aged 46 years. The remains were taken to Northfield, Vt. for burial.

Dr. H. S. Sleeper, of the class of 1891, University of Vermont College of Medicine, and now of Lewiston, has been elected a member of the board of health of that city.

The quarterly meeting of the Cumberland County Medical Society was held at Portland, Dec. 29. The program consisted of a paper by Dr. S. P. Warren on "Caesarian Section in Maine," discussed by Drs. S. C. Gordon, Alfred F. King, and John Thompson; an account of the work being done at the Maine Sanitarium at Hebron, by Estes Nichols, and a paper by Dr. H. F. Twitchell recounting his observations during a trip to the northwest and especially his visit to the Mayo's Hospital at Rochester, Minn.

Dr. James Lang Harriman, one of the oldest resident physicians in the eastern part of the state and prominent in Masonic and Grand Army circles, died Dec. 29 at his home in Hudson. He was born in Peacham, Vt., attended Thetford and Phillips Exeter academies, later studying medicine with Dr. Albert Winch of Whitefield, N. H. He then took a course at the medical college at Woodstock, Vt., going from there to Albany and to Bowdoin from which he was graduated in 1857. The funeral which was held Dec. 31, was largely attended by his medical associates, and the bearers were representatives of the six medical societies to which Dr. Harriman was a member.

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### MASSACHUSETTS.

Dr. George W. Deane, for over 60 years a practicing physician, died at his home at Hyanis, Dec. 29, aged 91 years.

Dr. A. W. Bridge, University of Vermont, 1905, has received an appointment at St. Luke's Hospital, New Bedford, the result of a competitive examination.

Drs. C. A. Davis, E. A. Kennedy and A. V. Cooper, all of the class of 1905 of the University of Vermont, are filling appointments at the Massachusetts Epileptic Asylum at Palmer.

The death of Dr. Horace M. Nash occurred at the City Hospital at Worcester, Dec. 24, after a short illness. Dr. Nash was born in Bath, Me., 61 years ago and was graduated from the medical department of the University of Vermont in 1876. He started practice in Manchester, N. H., thence removing to South Lancaster, Mass., and had lived in Worcester for the past five years. He is survived by his wife and one brother.

The death of Dr. C. H. Witham of Cambridge occurred Dec. 24. Dr. Witham was a native of Illinois but spent most of his early life in Maine, being graduated from Brunswick Medical College in 1875, at the age of 21. He commenced practice in South Waterboro, Me., and afterwards practiced in Portland, Knightville, Colorado, and Cambridge, where his death occurred, having practiced twenty-four years in that city.

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### NEW HAMPSHIRE.

One of the old time physicians, Dr. John H. Sanborn, died at his home in Franklin Falls, Dec. 19. He was a graduate of the Berkshire Medical Institute of Pittsfield, Mass., in 1852 and served during the civil war as regimental surgeon. He had practiced in Franklin Falls for 35 years.

Dr. John Mullen, one of the best known physicians of Portsmouth, died at his home in that city, Dec. 17, being 42 years of age. He was born at Gorham, N. H., and began his study of medicine as a pupil of Dr. True of that place, and was graduated from Dartmouth in 1887. He was for several years city physician and member of the board of health of Portsmouth and ranked high in his profession as one of the most skilled surgeons of the state.

Dr. William M. Parsons of Manchester received a pleasant reminder of the esteem of his friends on Dec. 30, when 80 members of the Masonic order called to felicitate him upon reaching the 80th anniversary of his birth. Dr. Parsons was one of the early graduates of the medical department of the University of Vermont, being a member of the class of 1851. After practicing in Bennington, Vt., and Antrim, N. H., for over 20 years, he finally removed to Manchester where he soon became one of the foremost physicians of the city. Although now retired from active practice, Dr. Parsons retains his interest in medical work and is heartier than many men a score of years his junior.



## CONNECTICUT.

Dr. Dean S. Drake of the class of 1904, University of Vermont, is at present senior resident physician at the Backus Hospital at Norwich. Dr. L. L. Leonard, '04, has received an appointment as junior resident physician in the same hospital and began his service Jan. 1.

## NEW YORK.

Dr. Oliver A. Blumenthal, of Syracuse, a tuberculosis specialist, died at Saranac Lake late in December, a victim of the disease to conquer which in others he had made his life work. The disease was contracted through his constant association with tuberculosis patients and he was literally a martyr to the cause. He was probably the foremost tuberculosis specialist in Syracuse, having made a special study of the disease for ten years and treated scores of patients constantly in all walks of life. He was 35 years old and maintained his energetic practice until last September. Then he went to Asheville, N. C., where he did not improve, and finally returned to Saranac Lake.

## AN EPITOME OF CURRENT MEDICAL LITERATURE.

## PNEUMONIA.

## PNEUMONIA FROM AN EXPERT STANDPOINT.

The Pneumonia Commission of Experts, appointed a year ago by the New York Board of Health, has made a preliminary report. The following is an abstract of its findings:

1. Pneumonia is due to micro-organisms.
2. Pneumococci are present quite generally in mouths of healthy subjects.
3. Infection occurs from outside by direct contact or as auto-infection from patient's own mouth when natural resisting powers are lowered.
4. The micro-organism lives in dry saliva; so may be inhaled as dust.
5. In dried saliva the micro-organism is killed by direct sunlight or diffuse daylight.

## LEUCOCYTOSIS IN PNEUMONIA.

FREDERICK E. SONDERN (*Bost. Med. and Surg. Journal*, Dec. 21.) considers the value of blood examinations in diagnosis. Aside from its application in the blood diseases proper he considers it as a diagnostic measure in scarlet fever, typhoid fever, various surgical conditions and in pneumonia. In this disease he considers an examination of the blood of greatest value in diagnosis and prognosis.

In central pneumonia and in other cases where the general symptoms are present but the physical signs absent or confusing a pronounced leucocytosis often justifies the diagnosis. In the prognosis of pneumonia it has long been known that the absence of leucocytosis is a very grave and often fatal sign. From his own observations of the leucocyte count in this disease he draws the following conclusions: (1) Slightly increased polynuclear percentage indicates slight toxic infection, irrespective of the leucocyte count. (2) Greatly increased polynuclear percentage indicates severe toxic infection, irrespective of the leucocyte count. (3) Slight leucocytosis with slight polynuclear increase indicates fair resistance and a slight toxic infection. (4) Pronounced leucocytosis with slight polynuclear increase indicates good resistance and a slight toxic infection. (5) Slight leucocytosis with pronounced polynuclear increase indicates poor resistance and a severe toxic infection. (6) Pronounced leucocytosis with pronounced polynuclear increase indicates good resistance and a severe toxic infection. (7) Absence of leucocytosis with pronounced polynuclear increase indicates no resistance and a severe toxic infection; and a falling leucocytosis with a rising polynuclear percentage indicates diminishing resistance and increasing toxic infection. (8) Falling leucocytosis with a falling polynuclear percentage indicates diminishing toxic infection only, or recovery, in other words.

## TREATMENT OF PNEUMONIA.

J. TRACY MELVIN (*Denver Med. Times*, Dec. 1905) bases his treatment of pneumonia upon three conceptions: First—that the disease, with its abnormal temperature, has produced a foul, septic and probably stagnant alimentary canal, from which ptomaines and other toxic products are constantly being absorbed. Second—that there exists a marked vaso-motor disturbance of which the initial chill and subsequent fever are manifestations. Third—that the patient is or early will be intensely depressed by the rapidly forming toxins. Based upon these conceptions his treatment is (1) to clear out the intestinal tract by the best means, and for the purpose he prefers broken doses of calomel alone or combined. An intestinal antiseptic will then assist in maintaining the desired condition. For this purpose creosote or its derivatives, the salicylates or sulpho-carbolates may be given. (2) For the vaso-motor disturbances the author chooses aconite and veratrine pushed to definite and exact effect which should be shown by a subsidence of the pulse and temperature and an improvement of the heart action. (3) The depression is combated by special stimulants as strychnia and digitalis and sometimes alcohol used only late in the disease.

G. N. MACOMBER (*Denver Med. Times*, Dec. 1905), details the treatment of lobar pneumonia as follows: Acute lobar pneumonia runs a rapid course as a rule. Therefore the treatment should be energetic from the start. A cotton jacket should be applied at once, and if there is much pain, the ice bag should be used over the seat of pain for 12 to 24 hours. Should ice not be available, mustard may be substituted, or hot fomentations over the painful lung. I believe aconite or veratrum viride is strongly indicated during the fever stage, following the chill. After this, the treatment should be stimu-

lating, with every effort pointing to elimination. To this end I give the following:

R Liquor ammon. acetatis  
 Infus. digitalis, aa. ounce IV,  
 Strychninae, gr. ss.  
 M. Sig. Tablespoonful every four hours.

This formula will limit cough, sustain the heart, favor perspiration and render satisfactory elimination by way of the kidneys. I am also in the habit of giving 1-10 gr. hourly doses of calomel during the first stage of the disease. If expectoration is difficult, I would give some form of ammonia, either the muriate or carbonate. This treatment I have found very satisfactory in the average case. Should complications arise they must be met. Pleurisy or empyema requires timely attention. In extreme cases, oxygen has served well in tiding over a crisis. Serum treatment has been satisfactory in but one case. Alcohol may be indicated but I rarely give it, believing as I do, that strychnine is a safer heart stimulant and will meet all demands.

SAMUEL A. VISANSKA, (*Med. Record Dec. 16, 1905*) gives his treatment of broncho-pneumonia in children. The external treatment consists of a hot mustard bath in which the child is kept until there is a pink glow over the body. It should then be wrapped in a blanket and placed in bed. An application of hot camphorated oil with mustard is used if there is a pleuretic condition and the child is made more comfortable by them. This is applied anteriorly and posteriorly over the chest area with gentle massage. In cases where a quick counter irritant is indicated the mustard plaster will suffice. The chest can then be covered with a close fitting undershirt, lined with cotton material. Nothing heavy should be laid over the chest. Internal treatment consists of opening the bowels with calomel followed by a simple saline mixture; treating the cough with some simple palatable mixture.

R Spt. Ammon. aromat.  
 Vin. ipecac, aa drams II.  
 Syr. pruni virg. drams VI.  
 Syr. tolutan, drams IV.  
 Aq. anisi, q. s. ad. oz. III.

M. Sig: A teaspoonful every two hours to a child one or two years of age.

R Pot. citrat, grs. XXIV.  
 Vin. ipecac, drams II.  
 Spt. minderer, drams VI.  
 Syr. tolutan, drams IV.  
 Aquae, q. s. ad. oz. III.

M. Sig. A teaspoonful every two hours. If cough is very troublesome add a few drops of paregoric or deodorized tinct. of opium.

For stimulation whiskey and strychnine are usually adequate. For a child one year old 30 drops of best rye whiskey every three hours and strychnine grains 1-250 to grains 1-200. Where the pulse is over 130 tincture of digitalis should be resorted to with a careful inspection of the pulse. One or two drops should be given every three hours (for a child one year old) in a little syrup. This should not be followed by water. For lowering the temperature the ice cap and tepid sponging is sufficient. Broth, milk and egg albumen should constitute the diet. Oxygen should be used early in cases complicated with whooping cough or if the lung is greatly involved.

C. F. NIEDER, Geneva, N. Y. (*Journal A. M. A. November 18*), reports that he has treated six cases of pneumonia according to the method of Galbraith, with large doses of quinin and tincture of chlorid of iron (see *Journal A. M. A. July 9, 1904*, and Jan. 28, 1905), with very satisfactory results. Histories of three of the cases are given. He remarks especially the effect of this treatment on the circulation. Instead of the high tension pulse usually present in pneumonia, the pulse was of nearly normal tension and of good volume. Cyanosis, when present, was promptly relieved.

## TUBERCULOSIS.

### EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

JOHN H. PRYOR (*Medical Record Nov. 25*) discusses the early diagnosis of pulmonary tuberculosis. He expresses the conviction that the disease is rarely recognized at the proper time for successful treatment. He defines incipency according to the definition of the National Association for the Study and Prevention of Tuberculosis as follows:

"Slight initial lesion in the form of infiltration limited to the apex or small part of one lobe.

"No tuberculosis complications, slight or no constitutional symptoms (particularly including gastric or intestinal disturbances or rapid loss of weight).

"Slight or no elevation of temperature or acceleration of pulse at any time during the 24 hours, especially after rest.

"Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent."

The premonitory symptoms almost invariably present in combination in text books, are loss of appetite, chlorosis or anaemia, loss of weight, cough with or without expectoration, haemorrhage and fever. It is extremely rare that all of these are associated at an early time. With a slight recent lesion about the only symptom observable is a slight rise of temperature at some time in the 24 hours. There may be weeks or months before symptoms are complained of by the patient or chest symptoms can be detected.

### COMPARATIVE STUDY OF VARIOUS FORMS OF TUBERCULOSIS.

RAVENEL (*Am. Medicine, Dec. 9*) concludes a description of studies on various forms of tuberculosis as follows: (1) The division of mammalian tubercle bacilli into two types, human and bovine, first proposed by Theobald Smith in 1898, has been amply confirmed. These types have cultural, morphologic and tinctorial characteristics by which they may usually be recognized. The chief point of difference, however, is found in the very much greater pathogenic power of the bovine type. Bovine bacilli are, however, met with which have low pathogenic power. (2) No other species of mammal has been shown to harbor a variety of tubercle bacillus so constant in its characteristics as to justify its classification as a third type. (3) Other species suffering from tuberculosis derive their infection from man or from cattle. (4) The human tubercle bacillus, as a rule, has a low pathogenic power for cattle, but cultures are not infrequently found which are virulent for the bovine race. (5) The bovine tubercle bacillus has the power of invading the human body and producing the lesions of tuberculosis. (6) We are at present unable to state the exact proportion of cases



in which bovine tuberculosis is transmitted to man, but in view of the evidence at hand we must regard the disease in cattle as the source of a certain part of human tuberculosis, and any relaxation in our laws and precautions against bovine tuberculosis would be most unwise.

## OBSTETRICS.

### MANAGEMENT OF THE CORD.

J. THOMPSON SCHELL (*Am. Medicine*, Dec. 2) emphasizes the importance of careful asepsis in the management of the cord. The technique which he uses is as follows: As soon as the child is born the umbilical cord is clamped with a hemostat about three inches from its abdominal attachment; another hemostat is placed a short distance from the first one toward the placental end of the cord, and the cord is then cut between. The child is now wrapped in its aseptic receiving blanket and placed to one side, and the whole attention is given to completing the delivery of the mother, including possible repairs of perineum, etc. After the third stage of labor is completed, which usually takes ten minutes or more, we give our attention to the umbilical cord. In the short time required to complete the delivery of the mother, the vessels in the cord have ceased pulsating. The cord and abdominal wall immediately surrounding it are carefully washed in a 1 to 4,000 mercuric chlorid solution. The hemostat is then grasped in the left hand and a pair of scissors in the right hand follows the skin amniotic junction until it is severed completely in its entire circumference. Care must be taken not to cut too deeply, as the vessels of the cord are usually very close to the amniotic covering. If they should be cut, no serious hemorrhage will result, as the circulation has, as a rule, by this time practically ceased through these vessels. So soon as the vessels have been exposed, the amniotic covering and the Wharton's jelly is stripped away in a direction from the abdominal walls and a ligature consisting of a piece of very fine (No. 0) sterile catgut is then thrown around the vessels, and the cord is severed close to the ligature. The stump is washed in mercuric chlorid solution, dried with a piece of sterile gauze, and dusted with any good antiseptic dusting powder. The baby should not be put in the tub for about a week, but should be given a lap bath; the stump must be washed frequently in a boric acid solution, and a small amount of dusting powder used with the usual sterile pad and the abdominal bandage.

### PUERPERAL INFECTION.

RUDOLPH WIESER HOLMES (*N. Y. & Phil. Med. Journal*, Dec. 9) concludes a discussion of the treatment of puerperal infection as follows: Puerperal infection is not a specific disease. Diverse types of micro-organisms may be the etiological factors and any part of the parturient canal may be the seat of infection. The finger alone can ascertain the locality of retained remnant secundines. It is a grave error to neglect revision of the uterus after any instrumentation for the purpose of cleaning the uterine cavity. The danger of shreds in the uterus is greatly over-estimated as regards their role in infection. Active operative measures endanger the life of the woman doubly or trebly over the ex-

pectant plan. The use of saline purges administration of ergot, hydrastics, etc., removes much of the danger or necessity for active therapy. In a day or two the danger is often past, for like a baby, the lying-in woman is subject to evanescent febrile elevations.

## MEDICINE.

### WORK ON THE COLON BACILLUS.

VICTOR C. VAUGHN, JR. (*Journal Medical Research*, Nov. 1905) presents an exhaustive paper on the production of active immunity with the split products of the colon bacillus. The cellular substance of the colon bacillus was split up by chemical means into a poisonous and a non-poisonous portion. The paper details the work with both groups. This work yields conclusive evidence that the poisonous products of the colon bacillus are intra-cellular; that the bacillus contains at least two different groups each of which when injected into the animal body is capable of establishing a certain degree of immunity toward subsequent infection with living germs. One of these groups is contained within the toxic portion and probably represents a group which is common to many proteid bodies since it has been shown to be contained in the poisons secured through the chemical changes of egg albumen and peptone, as well as from the colon bacillus. The degree of immunity obtained through the agency of the group is not great and is non-specific. Again it is shown that the residue which is for all practical purposes non-toxic contains an immunizing group, stimulating the production of products bacteriolytic in nature, giving rise when followed by an injection of living bacilli to a primary increase of symptoms due to solution of many bacteria and liberation of their products. Immunity produced by this group is strictly specific and is much greater than that produced by the toxic group. As the colon bacillus represents a large class of bacteria with intra-cellular toxins these results are extremely important and seem to point a way to practical immunization against these diseases.

### CHRONIC CONSTIPATION.

J. A. MACMILLAN (*Medical Record*, Dec. 16) describes the pathology of and gives treatment, based upon the pathology, for chronic constipation. Excluding the cases due to intestinal cancer and stricture and grave nervous diseases he says a large proportion of these cases depend upon intestinal muscular atony. The fundamental fact to be considered is that normally the stretching of the intestinal muscularis by the contained feces causes peristalsis. The author takes advantage of this fact in his treatment which consists of rectal tampons of absorbent cotton, cheese cloth or lamb's wool made of sufficient size to cause some rectal distension. These are introduced through an ordinary proctoscope and packed into place by means of long forceps. Their therapeutic action in chronic constipation due to muscular atony is nothing short of specific. The tampons lubricated with vaseline are placed above the rectal valves and made to distend the gut at the rectosigmoidal junctiva. They are usually left in position from two to six hours on alternate days at first. As progress is noted the time between treatment is lengthened. The treatment has given good results in his hands in over one hundred cases.



## SURGERY.

## SINUS THROMBOSIS.

H. Hastings, Los Angeles, Cal. (*Journal A. M. A.*, November 18), reports two cases of sinus thrombosis which are of interest for the following reasons: In each case the thrombosis, though of otitic origin, was masked by the symptoms of other diseases, in one case by typhoid, and in the other by malaria. In neither case were the so-called classical symptoms, chills, sweats and fever present, and the suspicion of thrombosis was aroused in both by certain irregularities in the history which led to thorough examination of the sinus after the mastoid ablation. Hastings strongly advocates the examination of the sinus and emphasizes the danger of delay until the classical symptoms appear, since these are evidences of a late and dangerous state, viz., of septic disintegration. He has seen the sinus uncovered, purposely or unintentionally 115 times in 198 consecutive mastoid operations without any bad result. He believes that terminating a mastoid operation in an old case, or when there is much mastoid destruction, without uncovering the sinus and making sure of its condition, is bad surgical practice.

## DIAGNOSIS.

## TEST FECES.

HEINRICH STERN (*Med. Record*, Nov. 8) discusses the determination of intestinal functions by a test-regimen. The patient is fed for two days on the following diet: Breakfast consisting of one cup of coffee, 20 c. c. of milk, 10 grams sugar, 3 eggs, 75 grams wheat toast, 15 grams of butter; lunch of 20 grams rare beef steak, 20 grams butter, 100 grams potato mashed with 50 grams of milk and yolk of one egg, 30 grams of rice with 50 c. c. of milk, one cup tea with 20 c. c. of milk and 10 grams sugar; supper of one cup of tea with 20 c. c. of milk and 10 grams of sugar, three eggs, 100 grams wheat toast, 15 grams butter and 30 grams rice with 50 c. c. of milk. The discharges are accumulated from the 30 to the 48 hours. Intestinal disorders of gastric origin are indicated by large amounts of collective tissue fragments. Their presence invariably points to gastrogenous causation of the intestinal disturbance, no matter how completely the phenomena due to the latter may overshadow all subjective gastric symptoms. Intestinal disorders of hepatic origin are indicated when the test feces (1) are excreted in very large amounts; (2) when they present a greyish white color; (3) when the sublimate test is negative; (4) when considerable masses of the ingested fat reappear; (5) when very large amount of fatty acid flakes can be demonstrated; and (6) when there are no pathological amounts of other food debris present. Intestinal disorders of pancreatic origin can only be diagnosed from the last feces when the pancreatic degeneration is far advanced. Test feces in such cases contain similar amounts of fat as those in biliary obstruction. They differ, however, from the latter (1) by not being excreted in such large amounts; (2) by exhibiting normal quantities of biliary pigments; (3) by containing large quantities of muscle debris which are recognizable; (4) by frequently presenting fatty contents in the form of globules of neutral fat, when examined under the microscope; (5) by the occasional exhibition of putrefactive changes.

## RELATION OF STOMACH DISORDERS TO DIABETES MELLITUS.

SAWYER (*Am. Medicine*, Nov. 25) believes that derangement of the stomach exercises at least a powerful influence upon the clinical course of diabetes.

He believes that the fact that the analysis of the stomach contents cannot be found uniformly in this disease to be associated with uniform pathologic findings is not a sufficient ground for concluding that, therefore, the stomach may not be the starting point from which or in which errors of digestion begin; with the resulting error developed multiplied in the latter process of metabolism to the great detriment of the individual. Of 19 case histories which he brings forward to prove his conclusions, all but two showed actual catarrhal condition of the stomach, and in all the cases marked subjective benefits followed treatment of the catarrhal condition.

## BOOK REVIEWS.

A MANUAL OF CLINICAL CHEMISTRY, MICROSCOPY AND BACTERIOLOGY.—By Dr. M. Klopstock and Dr. A. Kowarsky: Translated by Thew Wright, M. D. Published by the Rebman Company, New York and London.

This book is intended as a manual for the practitioner. It assumes an elementary knowledge of chemistry and bacteriology. A preference is given for short simple methods of diagnostic procedure over the more elaborate methods of the larger works on the subject which it in no wise attempts to replace. The book is well arranged and printed and contains some good plates of bacteria and urinary sediment. Any practitioner will find it a useful addition to his library.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS, with special reference to the application of remedial measures to disease and their employment upon a rational basis.—By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, Physician to the Jefferson Medical College Hospital, Member of the Committee of Revision of the United States Pharmacopeia of 1905. Eleventh edition. Published by Lea Brothers & Co., Philadelphia.

The eleventh edition of Hare's Therapeutics is one of the most timely books of the season, being made up from the new Pharmacopeia which has itself but lately appeared. This last edition follows the same general scheme as its well-known predecessors, with several additions. Treatment is taken up quite fully, and the author has called upon his contemporaries in the handling of special subjects, de Schweinitz furnishing the article on diseases of the eye, Martin one on venereal diseases and antisepsis, and Hirst one on the diseases of puerperal state. The book is a worthy successor of the editions which have made this author one of the most widely read on the subject of therapeutics.

## SOCIETY MATTERS.

### MINUTES OF THE 92<sup>nd</sup> ANNUAL MEETING OF THE VERMONT STATE MEDICAL SOCIETY

Held in Burlington, October 12 and 13, 1905.

(Continued.)

#### *Delegate to White River Medical Society.*

Mr. President and Members of the Vermont State Medical Society:—As the regular delegates appointed by the society were unable to attend the annual meeting of the White River Medical Society your secretary acted as their proxy. It was the 20th annual meeting and it took place at White River Junction on May 16th. They have a very pleasing and happy custom of inviting the ladies to these annual meetings, which certainly adds interest to the occasion. Dr. F. A. Smith of Lebanon, N. H., gave an able paper on "Cerebro Spinal-Meningitis." From the discussion which followed it appeared that they had quite a good many many cases in that section the past winter. At seven o'clock all repaired to the dining hall, where a bountiful banquet was served. Directly after, the post-prandial exercises took place, Dr. H. N. Kingsford of Hanover acting as toastmaster. I soon learned that the physicians of that section are witty as well as wise. I think that our county societies might well copy from this society in the matter of inviting the ladies, certainly once a year.—Geo. H. Gorham.

#### *Delegates to Dartmouth Medical College.*

Mr. President and Members of the Vermont State Medical Society:—At 9 A. M., March 31, 1905, we met the delegates from the New Hampshire State Medical Society at Dartmouth Medical College for the purpose of orally examining those candidates for graduation who had successfully passed the written examination of the faculty. There were 12 of the class who came before us for examination. One-half of them were graduates of colleges before beginning their medical course. The method of conducting our work was much as usual. Each delegate had ten minutes in which to interrogate a man. When we had finished with each applicant a vote was taken as to whether he should pass or not. Every one of them was unanimously voted as worthy of a diploma. The signing of the diplomas closed the day's labor for us, but not the day's pleasure. We visited the Mary Hitchcock Hospital and the museums during the latter part of the afternoon.

From the moment of our arrival in Hanover we were treated as guests of the college. In the evening we attended the graduation exercises with the faculty, after which we were escorted by President Tucker and Dean W. T. Smith to College Hall, where a banquet was served to the graduating class, delegates and faculty. President Tucker acted as toastmaster at the post-prandial exercises, and the chairman of your delegation responded for the society.

In closing we report that the college maintains a thorough graded course of instruction lasting four years. We also take this occasion to thank the members of the Vermont State Medical Society for the privilege of serving them in such a pleasant capacity.—L. W. Burbank, O. C. Baker.

#### *Delegate to Massachusetts.*

Your delegate to the Massachusetts Medical Society would make the following report: I attended the meeting of the Massachusetts Medical Society in Boston, June 13-14, 1905. Tuesday forenoon was spent by the Fellows in visiting the different hospi-

tals. I went to the Boston City Hospital with Dr. Ralph C. Larrabee, who was holding a clinic of male patients. I was much benefited by watching all the different methods employed in diagnosis at that clinic. In the afternoon I attended the medical section at the Medical library, where very interesting and instructive papers were read on "Small Pox" by Dr. L. R. Jones of North Adams; "Ocular vertigo of interest to the general practitioner," by Dr. B. P. Croft of Greenfield; "A Clinical and Laboratory Study of the Therapeutic Value of Hydrochloric Acid in Diseases of the Stomach," by Dr. R. F. Chase of Brookline, and "The Medical Treatment of Hyperacidity and Gastric Ulcer," by Dr. F. C. Shattuck of Boston. All of these papers were well discussed by the Fellows. During this time there were papers on surgical subjects being read in another room in the library. At 4 P. M. Dr. Lewellyn F. Barker, professor of medicine at Johns Hopkins University, read a very valuable paper on "Methods in Medicine." At 8 P. M. the Shattuck lecture was delivered by Russell H. Chittenden, Ph. D., of Yale, on the subject, "Some Problems of Intermediary Metabolism." This was very interesting and instructive from a chemical standpoint. At the close of the lecture a reception was given by the Society to the president. Refreshments were served and a social hour spent. I met many U. V. M. men whom I had known in former years. They all had the appearance of prosperity. Wednesday morning was given up to a demonstration of the clinical and laboratory methods used in medicine. The demonstrations were organized by Prof. W. T. Councilman of Harvard and were a new feature in the Society. There were 21 of these clinics, all held in the Mechanics building that forenoon, covering all the clinical methods used in medicine and surgery. I attended Dr. Richard Cabot's clinic on "Methods of Physical Diagnosis in Internal Medicine," where I spent a very interesting two hours. Only those who know Dr. Cabot can appreciate what a treat it was. At 12 o'clock the annual discourse was given by Dr. Charles A. Drew of State Farm, Bridgewater. It was a very scholarly and scientific paper. Dr. Drew is a Vermonter. At one o'clock the annual dinner was served to 1,400 of the Fellows. The dinner was a sumptuous affair and the after-dinner speaking good. I wish to report that your delegate was most royally welcomed and cared for and had a good time every moment there. I hope our delegates in the future will all attend and get acquainted with the Massachusetts doctors. They are a royal set of Fellows.—F. R. Stoddard.

(To be continued.)

#### CHITTENDEN COUNTY SOCIETY.

The regular meeting of the Burlington and Chittenden County Clinical Society was held on Dec. 28. Dr. T. J. Strong read a paper on "Dhobie Itch in the Philippines; Some Personal Observations." The discussion was opened by Dr. C. F. Dalton. The question of holding afternoon meetings for the benefit of out of town members was discussed and it was decided to hold some of the meetings at an afternoon hour, the time to be arranged by the executive committee.

FOOD IN HEALTH AND DISEASE.—By Robert F. Williams, M. A., M. D., Professor of Principles and Practice of Medicine in the Medical College of Virginia. Adapted to the use of practitioners and students of medicine and nurses. 12 mo, 350 pages. Published by Lea Brother & Co., Philadelphia. Will be ready early in January.



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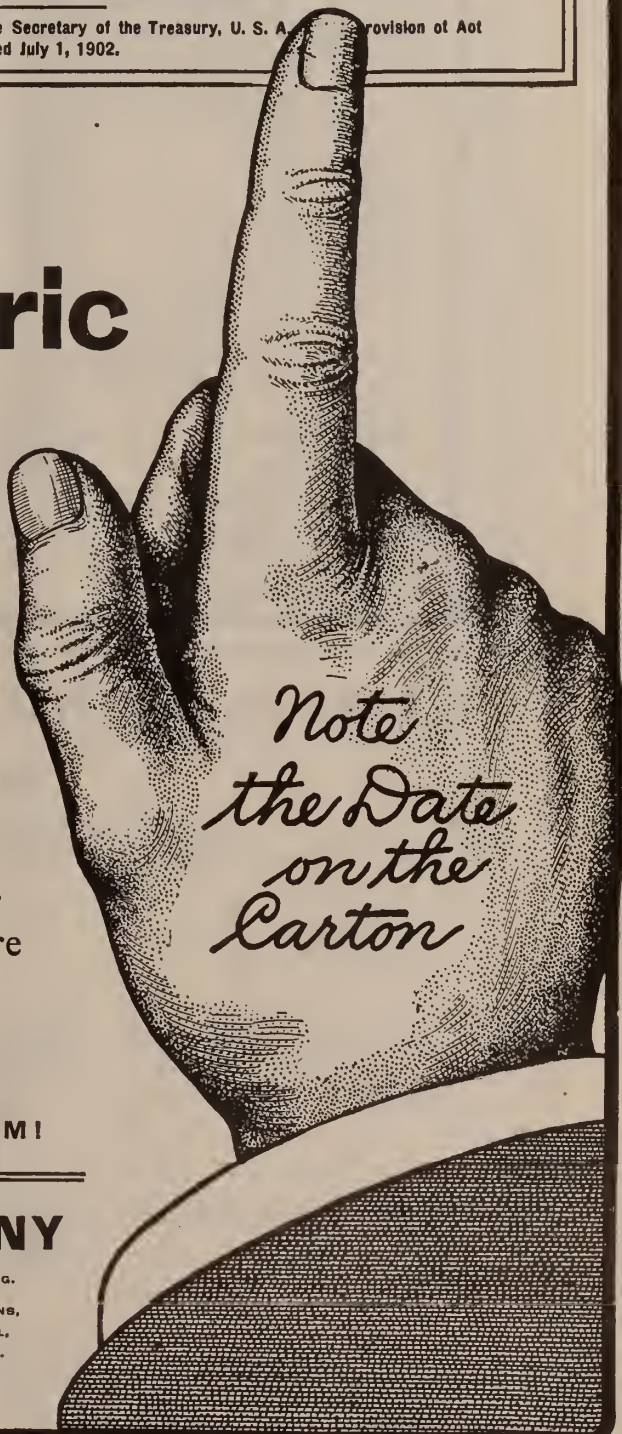
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# Vermont Medical Monthly.

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## ORIGINAL ARTICLES.

### SOME DISEASES OF THE NUTRITION: DIABETES, GOUT, OBESITY AND GALL-STONES.

THEIR CAUSATION AND TREATMENT.\*

*By Dr. Arnold Lorand, of Carlsbad, Austria.*

Mr. President and Gentlemen: I should like to interest you on the subject of the causation of some diseases of the nutrition. In order to live, we must eat. The food we introduce into our body, must be assimilated and burnt. Our body is in fact like a stove burning all the time. If the food we introduce into the body is not entirely assimilated and burned, it will make refuse, and that refuse must leave the body, consequently we have to appeal to the intestines and kidneys which for this purpose should be kept in good working order. We depend upon a healthy state of the kidneys to complete this work. When the kidneys have become diseased, when their epitheliums are in a state of degeneration, they will not be able to eliminate those substances, uric acid for instance. When much nitrogenous food is taken, as much meat, you find the amount of uric acid much increased and then look out for gout, for gout is a constitutional disease following over-nutrition, characterized by an excess of uric acid. When large quantities of sweet food are partaken of, we may often not be able to burn it entirely, and so glycosuria or diabetes might come about. The sugar will not be burned entirely but eliminated. When food, especially carbohydrate food and fat introduced into the body is not burned entirely, but only to a certain degree, it leads to obesity.

All this is not the fault of creation, but our own fault. We are eating too much and abusing the work of certain glands whose duty is to help the oxidation of the material. These glands are the blood glands, that is

the ductless glands,—the thyroid, testicles, ovaries, adrenals, hypophysis, etc. You can produce exactly symptoms indicating an augmentation of oxidations in the body by giving extracts of these glands, thyroid extract for instance. The same can be brought about by extracts of the sexual glands. It has been found by experiments if you give to a male dog an extract of testicles, this dog will have somewhat better oxidation but give to this dog the extract of ovaries and the result is still much better. The cause is because we are able to prepare better extracts of the ovaries than of the testicles. Thus it will come that ovarial extracts have more oxidizing effects than testicular ones. Life is nothing but a process maintained by oxidation. If the pancreas is extirpated in a dog, diabetes follows, but if the extirpated pancreas is transplanted under the skin, diabetes will not follow. This shows that these glands must have an internal secretion.

In many cases diabetes appears to be hereditary. Mechanical irritation of a certain area of the medulla, an area closely corresponding to the vaso-motor area of the fourth ventricle, invariably produces glycosuria, and diabetes is frequently the result of lesions producing similar irritation. This irritation may result from general shock, excessive mental labor, etc. These agencies are also able to produce alterations of the thyroid and also of the pancreas, which stands in close relation with the pancreas and consequently causes diabetes. The nervous system is very much under the control of these glands and any altered condition of the thyroid or ovaries is always followed by nervous symptoms. Young women reaching the age of puberty are often very nervous. Menstruation, pregnancy, lactation, menopause, climacterium, and the years of puberty affect the nervous system very noticeably. There are many instances on record where women have committed some offence—some crime—when they were pregnant. Thus there are cases of kleptomania occurring in women each time they are pregnant. She may feel disgusted and stand aghast at a person

\*Stenographic report of an address before the Burlington and Chittenden County Clinical Society, corrected and revised for this journal by Dr. Lorand.

who steals, when in her normal state, but when pregnant she may be afflicted with attacks of kleptomania. These women steal only during pregnancy.

All alterations of the thyroid are followed by nervous symptoms. Thus goitre might be followed by idiocy (cretinismus), and by giving such persons thyroid extract, we are able to raise their intelligence. Also in diabetes, gout and obesity, there are very frequently nervous symptoms. As I have said before, diabetes may come on after a nervous shock and may be acute and result fatally in three or four weeks, although it usually comes on slowly, insidiously. Gouty attacks may also follow a nervous irritation. There are very close relations between diseases of nutrition and nervous diseases. Many have considered gout as a nervous disease, and diabetes as a nervous disease too! Pineles and myself have shown that the blood glands stand in very close relation to each other, therefore if one is altered the others follow. Thus in acromegaly, you find alterations also of the other blood glands besides those of the hypophysis. With diabetes you find also changes in different blood glands, thus in the pancreas and the thyroid. Examining the pancreas in diabetes in some cases it has been found apparently intact macroscopically, but histologically you will find in it many changes, especially in the islets of Langerhans. It has been found by Minkowski and Mering that the extirpation of the pancreas in dogs always produces diabetes. I have found by an experimental work I have made with Professor Minkowski that taking away the pancreas in dogs and thus causing diabetes, the thyroid always shows alterations, especially enlargement of the folliculi and enormous hyper-secretion of colloid substance. Thus I have established the thyroid origin of diabetes.

Diabetics as a rule, except perhaps old persons, are always more or less nervous, thus indicating also clinically the part taken by the thyroid. In old people suffering with diabetes, however, such cases have nothing to do with the thyroid, but in young individuals, where the thyroid is not altered by age, we have a different question to deal with. In old people we are not expecting changes, for their thyroid is as a rule more or less degenerated by increase of connective tissue. In old persons diabetes is caused by degeneration

of the pancreas following arteriosclerosis, but in young persons it is brought about by alterations in the thyroid and pancreas, thus nervous symptoms are more frequent in young diabetics. Diabetes is very dangerous in the young, but not so much so in the old. There are persons suffering with diabetes who have been living many, many years, even thirty or more and without much suffering. Diabetes in the young, however, is usually fatal. In these cases, lifetime is short. Death may result in coma in a few days after a short illness.

Now as to diagnosis. The only way to diagnose a case of diabetes is by examining the urine. There may be frequently no symptoms whatever of diabetes except the presence of sugar in the urine and thus it happens that there may be hundreds of persons living and dying with diabetes but nobody knows about it. There are hardly ever any symptoms, except sugar in the urine and how could you find this, if the patient does not come to you at all. Do not wait for thirst, for I have known many diabetics, even severe cases who have had no thirst whatever. Diabetes may pass by unrecognized because there might be no subjective symptoms of the disease. The only sure symptom is sugar in the urine and this can only be found in those who come to us for advice. Every physician should examine the urine of every patient suffering from any disease. A diabetic has many various symptoms which might not be considered as symptoms of diabetes. Some consult a physician on account of impotency, of skin eruptions, for eye troubles, etc. You examine the urine and you find sugar. Many consult nervous specialists, others dentists for alveolar pyorrhea, surgeons for furuncles and I could relate other specialists too, but this all goes to show that the best thing to be done is to examine the urine of every patient who comes to your office.

This shows too the necessity for the examination of the urine of every patient before an operation is undertaken for it is pretty dangerous to operate on a diabetic. There may be some chance for a successful operation if there is only a little diacetic acid present, but if there is some quantity, it is a very risky undertaking for coma might follow and your patient die in a few days. Mark this statement and you will never regret following this ad-



vice—examine the urine of every patient to see if any sugar or diacetic acid is present. Now to do this rationally, a physician takes the quantity passed in twenty-four hours after a mixed food meal has been taken, examines it and if he finds no sugar, he gives a large quantity of carbohydrates, rice, cakes, etc., as a test dinner. You may find a very faint trace of sugar, perhaps one-tenth to two-tenths, but this might not be diabetes yet. Then you will give about two ounces of grape sugar and if you find about three-tenths percent, or perhaps even five-tenths percent of sugar, light diabetes is present. Give to all persons a test dinner, cakes, rice, sweet food, etc., and examine the urine two hours afterwards. If no sugar is found, I should even go farther and then give him two or three ounces of grape sugar and then you might get five or six percent of sugar in the urine—even when no sugar has been found before. Now you have recognized your case. With regard to insurance this is very important. If you are acting for an insurance company, for instance, and, examining the urine after ordinary food, fail to find any sugar and you do not give a test meal, the insurance might be recommended and in some longer or shorter time death might follow and the company suffer loss. If the patient had been given a test dinner the physician would have located the trouble and saved his company many dollars. Remember that a diabetic may at any time acquire gangrene and be lost in a few days. Often you can not operate successfully, for chloroform is very dangerous to this class. A diabetic may have a nervous shock. He might get pneumonia any day, so susceptible are they to such troubles and thus the end comes on suddenly.

After you have diagnosed your case of diabetes, you must ascertain what kind of diabetes you have got. When I get a diabetic in my practice, I give him a certain kind of food and he will eat a specified amount of mixed food. Then I estimate the amount of sugar it contains. After I have calculated the amount of sugar ingested I get a sample of urine from this twenty-four hour quantity. Now if this man has eliminated two ounces of sugar after he has ingested three ounces, it is not a severe case. He has introduced into his body more sugar than he passed. That case is not serious. He has burned some of the sugar received. But give him two ounces and if he passes more

sugar that case is more serious. Give him a meat diet without any sugar in it, and if he then passes sugar, his case is a serious one. Diabetes in children is nearly always accompanied by diacetic acid. As a rule diabetes does not come on all at once. It progresses slowly. It generally develops from a very mild case into a very serious case.

Now you ask, what brings about diabetes? The answer is, people are taking more food, especially carbohydrate food, into their bodies than they can burn. Diabetes may be hereditary, and frequently acquired on a hereditary basis. If you examine the children of diabetic parents you may find many characteristic signs. These children often become fat at the age of puberty. Examine the urine and you may find a trace of sugar. This gives you something to work for and to prevent diabetes you will forbid food rich in carbohydrates, especially sweets. Gout also may be inherited. In fact all the diseases in connection with alterations of the thyroid may be inherited. I quote here after Professor Lanz the case of a woman forty years of age. She had had two healthy children up to this time. She was perfectly normal and healthy. At 40 years old she became afflicted with goitre. One year after she had contracted this goitre she became pregnant and this next child inherited a goitre and became a cretin. This little instance and experiments of the same author on animals go to show us that diseases of the nutrition depending upon alterations of the thyroid can be inherited very frequently and it shows us what we must do to prevent diabetes, for it is absolutely impossible to cure it entirely for ever.

The first thing we must do is to tell the children of diabetic parentage, not to eat very much sweet food. I have shown by previous works that persons eating much meat and sweets at the same time are very prone to this disease but it also occurs in animals who eat much meat. I know the case of a pet dog who had plenty of meat, plenty of sweets and one-half pint of cream a day for several years and who one day became very thirsty. He drank water at frequent intervals. Examining a sample of this dog's urine sugar was found in large quantities. Another dog, a poodle, issuing from sexual relation between a father dog and its daughter and richly fed has also had diabetes. Among the Jews, diabetes is very frequent. Inter-marriage may be some cause of

it as well as brain work and rich food, especially much meat. It is far more frequent among the Jews than amongst any other class of people. I can not fail to observe that in the United States much sweet food and meat is taken at the same time, candy, soda, ice cream and cake are often taken after a heavy dinner of meats, etc., so perhaps in the United States diabetes may also be a frequent disease.

If you can find your diabetic at the beginning of the disease, you can do a great deal for that patient, but if the case has run on and it has grown to be serious, your man may be lost, therefore try as hard as you can to help him. If you take away the carbohydrate food you may be able to help him, but never give an exclusive diet of meat and fat. A strict meat diet is not a good diet for diabetics. Give a mixed diet with a certain amount of meat, green vegetables, especially cooked vegetables. Take stewed fruit or vegetables because when you stew the fruit or the vegetables the sugar goes into the sauce. Give some fresh peaches, apples or apricots as these contain only little of glucose. Also give milk in certain quantity. Bread can also be partaken of in cases of diabetes in a certain quantity, especially brown bread. Fresh potatoes contain sixteen per cent of sugar, old ones twenty per cent. There is another point to be considered. We must not diet too severely. There are cases where diabetics die before their time when they are dieted too severely. After an exclusive meat diet, diacetic acid will appear in the urine. When there is diacetic acid present in the urine, give the patient about two and a half or three ounces of carbohydrates a day and the diacetic acid may disappear. In such cases you may give rice sparingly. Supposing sugar is present in the urine, such a man may live twenty or thirty years but if he has diacetic acid in his urine, his case is often hopeless and his lifetime frequently is shortened; as a rule, he can not live very long.

Besides food, we have certain drugs, salicylates, opium, etc., that may be of some use against glycosuria. Alkaline waters are of great use, as in light cases the sugar will disappear entirely from the urine, and in severe cases to a certain extent but the symptoms always become better and the patient will feel much easier. Carlsbad waters can do much in the treatment of diabetes, and if one is able to go direct to the springs the benefit is more

marked, although the bottled waters may help to some extent.

In speaking of diabetes, I should like also to say a few words on the subject of obesity, for obesity is very near to diabetes. There are two kinds of fat persons. One kind of fat is caused by eating too much, i. e., by over-nutrition. Some persons eat until they can eat no more and at the same time they exercise very little. This necessarily causes fat, as the material can not be burned off and will be deposited in the shape of fat. Many old women keep growing fatter and fatter, without eating much, sometimes even very little and still they become fat. Where does the fat come from? They do not eat any amount of food. The woman past the climateric age takes on fat easily. Why? Because the thyroid and also the sexual glands have degenerated. If you take a male cat and remove his testicles, he will not wander away, but will become a steady home cat and put on fat. Castrated women become very fat. This is not always so, but it is the general rule. This goes to show that the organs of generation are also centers of oxydation, besides the thyroid gland. If you examine clinically these two classes of obesity, i. e., obesity by over-nutrition and endogenous obesity, caused by degeneration of certain blood glands you will find two distinct types. One will be often rosy cheeked, i. e., plethoric, will feel hot and will sweat easily. The bowels as a rule are regular in these cases or even show a tendency to diarrhœas. The other will have dry skin, never sweat, always be constipated and this fat will look like bacon. I call it bacon fat—"bacon obesity." This fat resembles very closely the fat in myxoedema.

Myxoedema is always connected with fat. Women are afflicted more often than men with myxoedema because there are certain connections between myxoedema and disorders of their sexual glands. (This disease is also at times congenital. In all cases of myxoedema the function of the thyroid gland is abolished. Complete removal of the thyroid gland in man or animals is followed by myxoedema and fat. In all cases when the thyroid has degenerated, fat will follow. Take a woman who has been pregnant several times and she will often run into fat. After prolonged lactation also fat will develop, the same way after a heavy infectious sickness, such as typhoid fever for in-



stance or pneumonia and sometimes after convalescence. Why? Because the thyroid gland has degenerated. In all infectious diseases the thyroid gland becomes more or less degenerated, and where the thyroid gland has degenerated, fat develops. In a case quoted by Hertoghe, the thyroid of a young bull was taken away and he became forty pounds heavier in a couple of months. In old age the thyroid is also as a rule degenerated and the material cannot be burned off, consequently fat may develop. Fat often is one of the symptoms of old age. Finally I remind you of the fact that alterations of the ovaries may be followed by alterations of the thyroid gland, as these glands stand in the closest relation to each other.

The above goes to explain why you give extract of thyroid in the treatment of obesity. Do not give too much meat when you give extract of thyroid for it might prove deleterious. We are able to reduce fat by thyroid extract, but we must examine the condition of the heart and urine. Sugar may appear in the urine after a large dose of thyroid. There are many cases of women who take extracts of thyroid to reduce fat without asking a physician and they bring about a lot of trouble by symptoms of intoxication which might easily be avoided by rational treatment. I should also like to mention that diabetes may appear in cases of obesity caused by overnutrition, but very rarely if ever in cases of endogenous obesity. Carlsbad waters are generally considered as an efficacious remedy in the treatment of obesity, as they have great purging effect. This is very important, especially as many of these fat women are subject to habitual constipation. You may give Carlsbad waters alone but with Carlsbad salts combined the purging effects are more pronounced. I believe in the purge as a great remedy. As diet in obesity we must forbid sweet and starchy food. In combination with thyroid extracts I also recommend the use of fresh ovarian extracts.

Obesity has intimate relation with gall-stones—and gall-stones often attack fat people. What is the cause of gall-stones? A sedentary, physically inactive life is a great factor in their etiology. A diet of over-rich food containing meat also predisposes to the formation of biliary calculi. As direct causes there are two principal morbid conditions which are con-

sidered capable of producing gall-stones. These are first, stagnation of the bile, and second, bacillary invasion from the intestine. In cases where the bile has become stagnated, gall-stones will follow, for when the bile is circulating freely it comes with a certain pressure into the duodenum by a narrow and oblique passage and hinders the invasion of bacilli. But when the tonicity of the gall ducts is lost especially after gall-stones have passed, the passage becomes larger and the infection easier. Pregnancies seem to have a peculiar influence upon the formation of gall-stones, but I have observed some women who never had children suffering from gall-stones. These cases showed symptoms of thyroid insufficiency, thus these women are generally fat, they never sweat, the skin is dry and they are troubled with habitual constipation and enteroptosis atonia of the intestine; all this indicates thyroid insufficiency. It must be borne in mind that atonia of the intestine is always followed by relaxation of the musculature of the gall ducts and thus by stagnation of the bile.

After alterations of the ovaries and uterus, as after pregnancies, menopause, climacterium, etc., gall-stones may be formed more frequently, also in these cases, by the well known connection between the thyroid and sexual glands, alterations of the thyroid will follow. It is not difficult to diagnose gall-stones. Find the gall bladder and press on it. The patient will cry out with pain and you have your case, even though there have been no attacks of colic. Gall-stones are very frequent after the menopause as Frerichs first observed it. In many climacteric women you will find the gall-bladder enlarged and sensitive.

For treatment, a laxative is an excellent remedy. As well-known, Carlsbad waters are useful in the treatment of gall-stones and I have seen many very interesting results from the use of these waters. The effects can be explained by the sulphate of sodium they contain, which makes a good flow of bile, and that is what we are looking for. The main point in the treatment of gall-stones is the treatment of the inflammation of the gall ducts. By many authors it is maintained that the effect of Carlsbad waters can be explained by their specific effect upon the mucous membrane of the gall ducts. For operation there are three indications: First, when the internal treatment has

not given satisfactory results; second, empyema of the gall bladder; third, impermeability of the duct when impacted by a large stone.

In fatty people, as well as in patients suffering from gall-stones, we are very apt to have rheumatism. The main factor in gout is the uric acid produced in large quantities, larger than can be transformed into urea, and a second factor is its retention. Thus to eliminate the uric acid, we should have good kidneys and we should avoid foods that produce uric acid. Meat produces uric acid, especially meat that contains nucleins in large quantity, as kidneys and liver. Uric acid is also formed in quantity by certain vegetables, as beans and peas. Rice produces the least uric acid. Beer produces more uric acid than other beverages, Bordeaux wine the least.

Gout is caused by toxic matter in the blood which we must eliminate in some way and we must also eliminate toxins in diabetes. The best way is to eliminate by the natural doors of the organism, the intestine, the kidneys and the skin. After a gouty person has been purged and been urinating much he feels better. Gouty persons perspire very freely and we must help this along. Give aspirine and he will perspire freely and urinate more and feel relieved of his pain. Besides Carlsbad waters, the hot mud baths as applied in Carlsbad are of great use. Alkaline saline waters are very beneficial in eliminating toxic matters. Thus in severe diabetes for instance, which means acid intoxication, I give large quantities of alkaline water, Carlsbad waters together with bicarbonate of soda by the mouth, and I introduce large quantities of warm sprudel water through the rectum. Coma is often prevented from coming on so suddenly. As soon as diacetic acid is present in some quantity this is your time for giving large quantities of alkalines. I make the intestines absorb one or two liters of Carlsbad water a day and give a certain amount by the mouth and then I give milk, which is also an alkalising agent. You must consider gout, diabetes and obesity and gall-stones as allied diseases, one being easily accompanied by the other, and the main point is to purge, to sweat and to make urine in large quantities and thus bring out these toxic matters through the natural doors.

## THE LEGAL REQUIREMENTS OF THE MEDICAL PROFESSION.

By C. J. Russell, M. D., LL. B., Burlington, Vt.

The Statute provides that any person twenty-one years of age, of good moral character, who is a graduate of a legally chartered medical college or university, having the authority to confer the degree of Doctor of Medicine, shall be entitled to take the examination prescribed by the board of medical registration; and, if found qualified, shall be licensed to practice medicine and surgery in the State of Vermont; the said license to be recorded in the office of the secretary of state within thirty days from the date thereof. Then the young physician offering his services to the public is required by law to possess or exercise, not the highest degree of skill, but ordinary skill; or he is liable in damages for disastrous results.

It is a little difficult to define the expression, "ordinary skill," but it has been held to mean, by the courts in this state: "That degree of skill exercised by physicians or surgeons in the same general neighborhood, in the same general lines of practice in like cases." That is: If a physician does, in a case, what the average class of physicians are accustomed to do and would do in such cases, then he exercises what is meant by ordinary skill in a given case; and if he exercises such skill, then he is not liable for lack of skill, even though injury occurs that might have been prevented if the physician had possessed and exercised greater skill; unless he is a specialist and holds himself out to the public as having *extraordinary skill* in the treatment of that particular line of diseases.

The law does not countenance quackery, and although it does not require the most thorough education and unlimited experience it does require that an uneducated, incompetent, ignorant man shall not, under the pretense of being a legally qualified physician, attempt recklessly, blindly, and unskillfully to administer medicines or perform surgical operations.

None but the most general tests of a physician's skill can be stated as rules of law. The skill and modern theories of the young



physician who chances to locate in a country town, are not to be compared with the old practitioner, who, for more than a generation, has not looked into a medical book or journal; and who, for the sake of the almighty dollar, and without regard for medical ethics, jealously tries to guard the practice that he sees rapidly slipping through his fingers, by declaring that he does not believe in the "new-fangled ideas and bug theories."

Then, again, the great variance between the medical theories which find acceptance among different schools, each of which has its sincere and devoted adherents, and each being, in the estimation of its opponent, mere quackery, makes it impossible to assert, as a proposition of law, that any particular system affords an exclusive test of skill in the treatment of disease; but the physician who professes to belong to a particular school, must come up to its average standard and must be judged by its test, and by the light of the present day. That is: If a physician should practice the reckless and indiscriminate use of the lancet, and the indiscriminate use of calomel and jalap, which was in vogue a half a century and more ago, or should shut up a patient with a fever, denying him any cooling drinks, would doubtless find, in an action against him for damages, the old practice a poor excuse for his imbecility.

The condition of a patient when medical aid is summoned, ought always to be considered in determining whether ordinary care and skill have been used by the attending physician. What might be deemed ordinary care and skill under certain circumstances would be gross negligence under other circumstances.

The aforesaid condition does not determine the right of action, but affects the question of damages. The right of action depends upon whether or not the condition of the patient afterwards is due to the treatment, skill or neglect of the physician. The physician may decline absolutely to take charge of a particular case, but having once begun the task, he cannot abandon it until a reasonable time has been given in which to employ other attendance, and then, not without reasonable cause. If his personal attention is no longer necessary in the treatment of a particular case during convalescence, he should still give the patient instructions in regard to his case, and a failure to do so is actionable negligence.

It has been held by the courts in other states, including New Hampshire, Massachusetts, and New York, that a physician, like an attorney, is not liable for errors in judgment in a given case, if aided by the recognized and approved methods; but he cannot interpose his judgment contrary to the well settled theories and practices of the profession. He must apply the settled principles of the profession and not experiment with his patients to their injury.

In an action against a physician for malpractice, based upon the non-recovery or slow recovery of the plaintiff, the defendant has a right to show that the results were caused by the carelessness and neglect to follow the advice of the defendant by the plaintiff himself, or his attendants. The patient is bound to follow the advice of his physician but a failure to do so will not relieve the physician of liabilities for previous unskillful advice, treatment, or neglect; though will be considered in estimating the amount of damages resulting from the said unskillful advice or treatment.

In the preparation of this article, I have used freely the authorities upon this subject, including the Statutes and the decisions of Vermont and the decisions of other states.

### RECIPROCAL RELATIONS OF VERMONT.

*By W. Scott Nay, M. D., Secretary Vermont State Board of Medical Registration.*

The special examinations for the benefit of the unrecorded physicians in Vermont are through. There are now only a few who have not yet obeyed the summons of the Board of Medical Registration, and they will come at the next regular examination of the Board in July. Several of the registered physicians in the state are availing themselves of the examination in order to receive the certificate of the Board, now issued, which will enable them to enter into reciprocal relations, should they choose with such states as admit of it, and whose requirements would not admit of a certificate issued previous to 1900, 1901 and even to July, 1905, being recognized. Vermont now reciprocates with the states of Maine, Maryland, Michigan, Wyoming, New Jersey, North Dakota, (only on certificates issued subsequent to July 1st, 1905) and the District



of Columbia in special cases. Anyone desiring to avail himself of the privileges thus afforded can receive full information by communicating with the secretary.

The two regulars who came before the Board of Medical Registration, for the full examination at Montpelier on January 9, 1906, were both successful. These were Dr. Alexander Borland of St. Johnsbury and Dr. Robinson Bosworth, of Brighton. The next regular examination of the Board will be held in Burlington on the second Tuesday in July. The list of questions follows:

## ANATOMY.

- 1 Name the bones entering into the formation of the thorax.
- 2 What essential structures enter into joint formations?
- 3 Describe the temporo-maxillary articulation.
- 4 What muscles are attached to the bicipital groove of the humerus?
- 5 What vessels enter into the formation of the circle of Willis?
- 6 What constitutes the floor of the fourth ventricle?
- 7 Describe Peyer's patches and state where they are most numerous.
- 8 Describe the pleural membrane and give its relations.
- 9 Describe the male urethra and state its divisions.
- 10 What is the normal position of the uterus? Give its blood and nerve supply.

## SURGERY.

- 1 Describe inflammatory action, give causes.
- 2 Describe the process of repair in flesh and bone.
- 3 For what conditions would you perform tracheotomy?
- 4 How would you treat a fractured clavicle?
- 5 Describe the operation for the removal of hemorrhoids.
- 6 Give causes, symptoms and treatment of phlebitis.
- 7 Name the various forms of ulcer.
- 8 Give causes, symptoms and treatment of whitlow.
- 9 Name three methods of reducing dislocation of shoulder.
- 10 Describe the operation for appendicitis in detail.

## OBSTETRICS.

- 1 Give treatment of eclampsia.
- 2 Give indications for use of forceps.
- 3 Give mechanism of head presentation.
- 4 Give symptoms of ruptured tubal pregnancy.
- 5 Name positive signs of pregnancy.
- 6 Give symptoms of placenta previa.

## GYNECOLOGY.

- 1 Give treatment of chronic metritis.
- 2 Give symptoms of prolapsus uteri.

## LEGAL MEDICINE.

- 1 Give the legal definition of a wound.
- 2 What conditions are indispensable to cause putrefaction?
- 3 Name three acid poisons.

## PATHOLOGY.

- 1 Give the symptoms and pathology of progressive bulbar paralysis.
- 2 How would you distinguish a spinal from a cerebral hemiplegia?
- 3 If after a hotly contested football affray, one of the combatants should be picked up, showing no severe external injury but with the right arm and leg paralyzed, and unable to tell his name and residence, though conscious and able to ejaculate some favorite oath or expression, where and what would you suppose the lesion to be, and what would your prognosis be as to his future brain power, supposing he should survive?
- 4 Give the pathology of ulcerative endocarditis, and the train of symptoms likely to ensue.
- 5 Give the pathology of chronic bronchitis; its symptoms and sequelæ. For what disease is it most often mistaken?

## THEORY AND PRACTICE.

- 1 Detail the symptoms, course, usual termination, pathology and appropriate medical treatment of appendicitis.
- 2 Give the cause, symptoms and treatment proper for tenia solium.
- 3 What are the symptoms, causes and most successful methods of treatment of scorbutus?
- 4 Give the pathology and the indications for treatment of tetanus.
- 5 Give the symptoms and usual course of influenza.
- 6 Describe the train of symptoms usually following obstructive disease of the aortic valves, and what would you do to alleviate those symptoms?
- 7 Give the etiology and symptoms of acute nephritis.
- 8 Give the etiology, symptoms and treatment proper for erysipelas.
- 9 What is septicemia? Give the indications for treatment.
- 10 How does pyemia differ from septicemia?

## CHEMISTRY.

- 1 (a) What is meant by specific gravity?  
(b) What are the standards for liquids and solids?
- 2 Describe a physical solution, a chemical solution, a saturated solution.
- 3 (a) Name two liquid elements.  
(b) Name two gases which have been liquified.
- 4 (a) Define metabolism, anabolism and catabolism.  
(b) Mention and define the processes comprising nutrition.
- 5 What is the final result of the decomposition of dead plants or animals?

## MATERIA MEDICA.

- 1 (a) How is amyl nitrite prepared?  
(b) Give physiological action of same, and state how the drug is eliminated.
- 2 Give the official preparations, doses and alkaloids of the following: Colchicum, pilocarpus, pulsatilla, scoparius.
- 3 Give the adult, and child (1 year) dose of the following: Tr. aconite, Tr. bryonia, potassium iodide, morphia, calomel, rhubarb, bismuth.
- 4 (a) Give the origin and properties of hydrastis.  
(b) Name two alkaloids, the official preparation and the dose of each.
- 5 Give the adult, and child (5 year) dose of atropine and the physiological action of same.

## THERAPY.

- 1 (a) Give the dose of croton oil.  
(b) Give the therapeutic indications, contra-indications and best way to administer same.
- 2 Name five hypnotics; give dose of each and best method of administration.
- 3 Write formulas for the following: (a) alopecia; (b) psoriasis; (c) catarrhal jaundice; (d) gastralgia; (e) cystitis; (f) chlorosis.
- 4 Give symptoms and treatment of strychnine poisoning.
- 5 Differentiate between opium poisoning, alcoholic coma, apoplexy, uremia, suspended animation, and give treatment of each.

## PHYSIOLOGY.

- 1 Describe the systemic, portal and pulmonary circulation.
- 2 What is meant by reflex action of the nervous system?
- 3 Name the branches of the fifth cranial nerve, and give the distribution of the same.
- 4 Give the name and source of the inorganic proximate principles.
- 5 Give the composition of the bile, both organic and mineral salt.
- 6 Give the normal constituents of the urine.
- 7 What is the normal ratio of heart pulsation to respiration in the healthy adult?
- 8 Describe the process of digestion and absorption of food.
- 9 Describe the lymphatic system and give its function.
- 10 Describe the different kinds of muscular tissue, and the mode of action of each.

## HYGIENE.

- 1 Mention the different methods of bathing and mention the different rules to be observed in each.
- 2 How would you build and furnish a schoolhouse, observing hygienic rules?
- 3 What is the most healthful material to be worn next the skin? Why?
- 4 Give the causes of diphtheria, and the necessary precautions to prevent it.
- 5 What is the source and danger of carbon monoxide in living rooms?

## BACTERIOLOGY.

- 1 Name three classes of bacteria.
- 2 What is the difference between a saprophyte and a parasite.
- 3 What are facultative bacteria?
- 4 Describe the germ found in erysipelas.
- 5 What germs are liable to be mistaken for the tubercle bacillus?

## WOOD ALCOHOL POISONING.

## REPORT OF A SERIES OF CASES.

By *H. A. Bogue, M. D., of Richford, Vt.*

[Poisoning by wood alcohol when taken as a beverage, has occurred from time to time, and more or less of the symptomatology has been reviewed. Different authors, however, have described a variety of effects, which have sometimes been difficult to correlate or even

to reconcile. The physicians who attended the cases at Richford late last November fortunately kept records of the train of events following the imbibation, and this series of cases reported by Dr. Bogue indicates how apparently opposite results may follow under different local conditions.]—Editor.

Case No. 1. Mr. B, age 70. Drank one-half pint of what was supposed to be ordinary alcohol, from Wednesday evening, Nov. 22, to Thursday evening, Nov. 23. No special symptoms were noticed by the family until about 11 P. M. Nov. 23, when he awoke from sleep and complained of severe pain in chest, back and shoulders, with violent paroxysms of pain in the stomach. Movement of the jaws also produced severe pain. So severe was the general agony and restlessness, that he could not be induced to lie in bed, but got up and walked the floor, sat by a hot stove, and as related by the family, in every way sought relief. This continued until about 3 A. M. when he became comatose, and died at 4 A. M. The result of an autopsy was entirely negative. The stomach and contents were taken to the state laboratory for analysis.\*

Case No. 2. Mr. R, age 43. The quantity of liquor taken is not definitely known, but as there were two empty half-pint bottles found, both of which had the characteristic "combination" odor, it is probable that he drank the entire pint. He began drinking Wednesday in the afternoon, Nov. 22, and took his last drink at 6 P. M., Nov. 23. No special symptoms were noticed until about 9 P. M., when he complained of severe pain in stomach, chest and jaws. At 10 he vomited. Pain continued with great prostration, and at 12.30 he became comatose and died at 1.30 A. M. Result of autopsy was negative. Stomach and contents were taken to state laboratory for analysis.†

Case No. 3. Mrs. L, age 25. Drank one-half pint of same brand of liquor as cases No. 1 and 2, during day and evening of Nov. 24. Complained of some pain and vomited twice before 10 P. M., after which she went

\*This stomach, being badly decomposed, was not examined at the State Laboratory of Hygiene.

†In this case the State Laboratory reported the presence of considerable wood alcohol in the stomach contents. Seven bottles, containing from a few drops to 4 ounces each of liquid were submitted for analysis, and contents of each gave reactions for wood alcohol.



to sleep. Her husband awoke at 6 A. M. and found her dead.

Case No. 4. Wm. P, age 46. Nov. 24, before breakfast, drank about one ounce of wood alcohol mixed with cider. Complained of inability to see distinctly at 9 A. M., which gradually grew worse until 12 P. M., when he was totally blind. Seen at 12 P. M. Patient then suffering from heart failure, dyspnea, irregular and thready pulse, cold, and covered with profuse perspiration. Under active stimulation hypodermically with strychnine, whiskey and digitalis, he rallied some so that the physician was able to leave him at 7 A. M., Nov. 25. At 12 noon, the same day, he had another attack of heart failure which did not last as long, but the dyspnea did not subside until Nov. 26, after which the reflexes finally became normal. The eyesight was totally gone until Dec. 3, after which there was a partial return and there has been some improvement every day since, but now the patient is only able to distinguish objects as dark shadows and has no power to tell colors or focus. He had no vomiting throughout the time and there was a total absence of pain except that he suffered violent headache Dec. 8 during 48 hours.

Case No. 5. Male, aged 40. Bought four ounces of alcohol Nov. 22 and drank at different times of it until Nov. 24, at which time he drank the last. Complained of inability to see at 3 P. M., Nov. 24. Went home and laid down a while but felt better so that he went out again in the evening. Physician was called at 9 o'clock the next morning. Patient found suffering prostration, weak, irregular pulse, almost totally blind. Given hypodermically strychnine, 1-50 grain, and aromatic spirits of ammonia and strychnine to take during the day. At 9 P. M. patient was in about the same condition but had vomited some. Vomiting continued throughout the night and during the day, Nov. 26, but subsided during that night. Was then very weak and remained in that condition until Dec. 1, when he was able to be out a little. His sight which had returned partially, was improving when Dec. 4 he was sent to a specialist in Montreal. Patient suffered from violent headache during the first forty-eight hours.

Case No. 6. J. B., male, aged 40. Patient secured one quart of alcohol, put in eight ounce vials, of which during three days he drank one pint. Seen Nov. 25. Found sit-

ting up, but suffering some prostration, and had been vomiting and purging some. Some indistinctness of vision and some dyspnea, but otherwise well. I attribute his slight symptoms to the fact that he had heard of the other cases and taken a large dose of salts which had relieved his system from the poisonous effects of the alcohol to a marked degree. This patient did not have the usual headache nor blindness although he drank more than any of the others.

Case No. 7. Mr. M, aged 42. Drank one-half pint of liquor procured at same time and place as No's. 1 and 2. Commenced to drink Wednesday evening, Nov. 22, and finished at 4 P. M., Nov. 23. Shortly after his last drink he noticed a decided inability of coordination of movement, though he avers, without the slightest sense of intoxication. At 5.30 P. M. he began to have some pain in his stomach and some nausea. This induced him to take several raw eggs, after which he vomited very freely. During the night there was more or less general distress and prostration which continued during the next day with occasional vomiting. He complained of there being a mist before his eyes, though he could readily distinguish objects and could see to read. Treatment consisted of a large dose of castor oil, and 1-40 grain of strychnine every two hours. This patient made a complete recovery.

It will be noticed from the foregoing cases, that while poisoning from wood alcohol has many symptoms in common, its toxic manifestations are nevertheless quite complex, which would seem to be due to the degree of rapidity with which absorption takes place as well as to individual susceptibility. The three fatal cases were markedly alcoholic subjects, the other four are moderate drinkers. The three fatal cases complained of no disturbance of vision, nor other special symptoms till they had gotten the cumulative effect of the poison, while the other extreme is manifest in case No. 5, who took but one ounce mixed with cider and drank it before breakfast. In this case toxic symptoms occurred in three hours with total loss of vision at the end of six hours, while in case No. 7, the patient probably saved his life by the prompt ingestion of raw eggs, and copious vomiting which they induced.

In preparing notes of the above cases I wish to acknowledge my indebtedness to Drs. R. M. Pelton and C. S. Scofield.



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### EDITORIAL.

The February issue of *The Ladies Home Journal* contains a carefully prepared bill entitled "An Act to Regulate the Manufacture and Sale of Patent and Proprietary Medicines." Edward Bok, the editor of the journal, says of the bill, "In all fairness, then, to the honest "patent-medicine" manufactures, and with no desire to injure in any way the honest men engaged in the business, this magazine has had drafted a "model" legislative bill, a copy of which is printed on the first leaf of this issue of the Journal. This is not a bill of our individual drafting or of our own personal approval. It has been submitted and carefully gone over by the most distinguished and conscientious representatives of the law, of medicine and of the drug trade in this country. It is not a one-sided affair. It is not aimed to injure but to protect. We have the best of reasons for believing and saying that the provisions of this bill will not be ob-

jectionable to those manufacturers of "patent medicines" who have really an honest article and are not afraid of putting the contents of their medicines on the label of each bottle. The honest men engaged in the "patent medicine" business are just as anxious as are we or any one else to stop the deceit and trickery running wild in their trade. So the bill we print is fair and just."

The passage of such a bill in every state would we believe be productive of much good. We agree with Anders that the nostrum evil can be most effectually remedied by comprehensive legal enactment compelling all makers of proprietary articles to place the formula on the bottle. Such legal enactment can only be brought about by a campaign of education and the high class publications like *The Ladies Home Journal* and *Colliers Weekly* who are using their pages for this purpose should receive the support of the entire medical profession.

The preparation by Torrey of a curative serum for gonorrhoeal arthritis is of more than usual therapeutic interest. Heretofore the preparation of sera for those infectious diseases whose bacteria elaborate intra-cellular rather than extra-cellular toxins has not met with success as a curative measure. Such sera have possessed bactericidal properties which have resulted in the solution of many organisms with a liberation of their toxic substance and a consequent increase of symptoms. The fact that the rapid dissemination of this poisonous material may be productive of dangerous consequences has had a subduing effect on this line of therapeutic research. The similarity of the gonococcus and the diplococcus intra-cellularis meningitidis suggests immediately that the method of Torrey may be productive of results in this disease.

More than ordinary interest attaches to the article in this issue by Dr. Arnold Lorand, as showing the views of one who has studied the diseases of nutrition at Carlsbad, the home of the cathartic water treatment. The diseases of which he writes are certainly a series which at best are imperfectly understood. Diabetes for example. Where is the sugar formed? Does all the sugar pass through the glycogen stage before appearing in the urine? What, after all, is the role of the Islands of Langerhans? These, and others, are questions waiting to be answered. The views of Lorand with relation to the diagnosis of diabetes are unique. Can we imagine what the result would be if every applicant for insurance were submitted to a test meal of carbohydrates before acceptance? And yet, as the author truly states, without these precautions, many incipient cases may go unrecognized and the company suffer loss. We may well ask where the line is to be drawn. The gist of the whole matter seems to lead to one conclusion. Physicians in general practice do not as a rule give sufficient thought to causative factors in obscure diseases. We discover our diabetics more often by accident than by actual search. The routine analysis of urine in every case should be a precept, sacred and inviolable, the following out of which would without doubt yield results in treatment which would amply compensate for the time thus spent.

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In this issue we are publishing the first of a series of articles by Dr. Chas. J. Russell, LL. B., on The Relation of the Law to the Medical Profession. These articles we anticipate will be of great value to our readers. The average doctor knows far too little of legal matters and the number of malpractice suits which have come up in our courts during

the last few years furnish a sufficient argument for the necessity of such knowledge. Dr. Russell's eleven years of medical practice previous to the time of his law studies render him eminently fitted to write upon this subject.

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That the use of wood alcohol is not confined to the arts alone, is evidenced by the increasing number of cases of poisoning by that article which are of recent occurrence. A few years ago a large number of cases of such poisoning occurred in New York City where, in a number of saloons, wood alcohol had been mixed with liquors. In 1903 there occurred the death of several members of the Underwood family in Lynn, Massachusetts. In Dorpat, Russia, a large number of deaths were reported from this same cause, and in this number of the MONTHLY there is an account of some cases of poisoning which occurred in this state in the latter part of 1905. Among the train of symptoms of wood alcohol poisoning is one of extreme importance, and that is the partial or complete blindness which may follow either its inhalation or ingestion. These results would seem to indicate that the sale of wood alcohol should be more closely guarded and that a "poison label" would not be out of place on every package of wood alcohol which is sold, whether that package contains the crude wood alcohol or the refined product which is sold under the name of Columbian Spirits, French Spirits, etc. A package of crude wood alcohol purchased recently bore a poison label while a package of Columbian Spirits bore a rather fancy label upon which there was this statement "can not be taken internally." This statement was not very conspicuous, and might well escape the attention of the casual observer. There is a bill before Congress at the present time which we believe

should have the careful consideration of all physicians and druggists. The bill is one to abolish the duties on grain alcohol so that it may be used to a greater degree industrially than heretofore. If these duties were removed, grain alcohol could be used in place of wood alcohol to a very great degree and thus avoid the harmful results of the use of the latter.

## CORRESPONDENCE.

### IS CANCER CONTAGIOUS?

EDITOR VERMONT MEDICAL MONTHLY:

More than ten years ago I became convinced that cancer was a contagious disease, the cause of the contagion being either a cell or a microbe contained in the discharges. I am now gathering facts to prove this, and that the disease is not hereditary as has been generally supposed. Less than twenty-five years ago everybody thought that tuberculosis was hereditary and no one believed that it was contagious. Now every one knows that it is contagious, with the result that the disease is being stamped out. One of the facts which has become very apparent from the study of my own cases of cancer is that it was the exception for them to have had a father or mother who had died from the disease; while nearly all of them had come in contact with some one, other than their father and mother, who had had cancer.

Through your columns I want to ask the profession of Vermont whether they have any cases of cancer at present under observation whose fathers and mothers were free from it; and if so if they would kindly communicate such facts to me. It would also be interesting to know whether there is any village which had been absolutely exempt from cancer until a case was imported from some other place, after which many other cases cropped up. Any one sending me facts bearing upon these two important points will receive due credit in an article which I am preparing for the Toronto meeting of the British Medical Association this year.

I recently published an article declaring that cancer was becoming very rare in my public and private practice, and I attributed this to the fact that every woman with a lacerated cervix had had the latter either repaired or amputated, so as to remove the scar tissue on which cancer mostly thrives. Since this paper appeared I have received a communication from a prominent gynecologist of Boston saying that he had had the same experience. I believe that a woman with cancer of the cervix is a centre of infection for all her friends and neighbors among whom there will develop cases of cancer of the lip, tongue, throat, stomach and intestine. If my contention should prove correct how important it is to make it known, so that there may be a crusade for stamping it out either by early operation, or when the case is first seen too late, then by isolation and disinfection. I am sure that no more important subject has ever occupied your pages than the investigation of the origin and spread of this terrible disease.

A. LAPHORN SMITH.

248 Bishop St., Montreal.

EDITOR VERMONT MEDICAL MONTHLY:

I enclose a copy of a contract which has recently been drawn up and circulated among the local physicians. It has been signed by every physician in town and possibly you can make use of it in the VERMONT MEDICAL MONTHLY. I am sure it will interest every man in the state. It should be general throughout the state. In my opinion the state society should take some action regarding contract practice.

"We, the undersigned physicians of Brattleboro, do hereby agree and pledge ourselves, not to contract with or render service to, the town or village of Brattleboro, any town or village in the immediate vicinity, any corporation, association, public or private, for the performance of medical or surgical service at rates less than the established rates for such service when rendered to private individuals. This to take effect when the signatures of all physicians residing in said town shall have been hereunto subscribed and contracts entered into before January 1, 1906, have been completed. It is also agreed that no new contract shall be made or old one renewed between January 1, 1906 and the date of expiration of already existing contracts."

WINFRED H. LANE, M. D.

Brattleboro, Vt.

EDITOR VERMONT MEDICAL MONTHLY:

I enclose a resolution which will speak for itself. The same resolution has been adopted by the New Hampshire State Society. I am very much surprised that the Vermont Medical Society should allow a sister state to pass such a resolution, and she lay the resolution on the table without action. There was also a resolution passed expressing our appreciation of the work Collier's Weekly has done in exposing secret nostrums and pledging our support to this periodical in their work in this line.

"On and after the first day of January, 1906, no member of this association shall accept the position of club, society, or organization physician, or agree to continue to do any medical or surgical work for any club, society or organization at a less rate than the regular or customary charges for like services rendered by other physicians in the same locality for patients not members of club, society or organization, also that in no case shall any physician agree to attend the families of the members of such club, society or organization at half price or a less price than the regular rate.

"Nothing in this resolution shall be construed as preventing any member from attending the worthy poor at a less rate or to give free service to those who are too poor to pay anything. Any violation of this by-law shall be considered unprofessional conduct, and it shall be the duty of the Censors to expel such member from the Association, when proof of such conduct shall be presented to them."

G. HAMILTON HAZEN, M. D.

East Corinth, Vt.

The following acts well in chronic asthma, relieving the attacks, and prolonging the intervals between them:

Ammonium bromid .....	3 drams
Ammonium chlorid .....	2 drams
Tinct. lobelia .....	3 drams
Spts. ether comp.....	1 ounce
Fluid extract of grindelia.....	1 ounce
Glycerin .....	1 ounce
Peppermint water, q. s. ad.....	4 ounces

Mix, and direct dessertspoonful in water every hour or two during attacks, and less frequently in the intervals.



## NEWS AND PERSONAL ITEMS.

*We desire to make this column of personal interest to all.  
Physicians are requested to send news items.*

### VERMONT.

**REPORT ON VISION AND HEARING OF SCHOOL CHILDREN.**—The report of the State Superintendent of Education, Mason S. Stone, on the result of the examination of the eyes and ears of school children, has just been published. Children of seven years and over throughout the state have been examined according to the act passed in 1904 and the results are most interesting medically. Out of 246 towns, 221 sent in reports, and in all 41,373 children were examined. Of this number 13,290, or 34.5 per cent. had either defective sight or hearing. Addison county has the largest percentage, 37.2, and Washington county the lowest, 30.9. The town of Glastenbury has the highest percentage of defectives, as out of a school of four pupils, three were unsound. The town of Stratton with two schools of 15 pupils had the lowest percentage, 6.7. The total number of eyes found defective was 11,105 and the total number of ears found defective was 749. The number of schools in which examinations were conducted was 2,065.

Dr. A. S. M. Chisholm of Bennington is taking a four weeks vacation tour in Mexico.

Dr. H. J. Porter, Jr., of Bennington, has resumed practice after a vacation of six months.

At the annual meeting of the Bennington County Medical Society, Jan. 10, Dr. J. B. Woodhull of North Bennington, was elected president.

Dr. Carl B. Dunn, who has been in practice in Swanton, has opened an office in Winooski. Dr. Theodore Peladeau of Burlington has removed to Swanton.

Dr. E. A. Tobin, University of Vermont College of Medicine, 1905, has bought a drug store in Bristol and will conduct it in connection with his practice.

Dr. James W. Courtney, health officer of Burlington, was married at Shelburne, Jan.

22 to Miss Anna Marie Dubuc of that place. Only immediate friends attended the ceremony. Dr. Courtney and his bride will occupy their new house on Elmwood avenue.

Dr. Charles S. Buchanan, University of Vermont, 1904, who has been an interne in the Samaritan Hospital of Troy, N. Y., for a year, has opened an office in Bennington.

The annual meeting of the attending staff of the Fanny Allen Hospital at Burlington was held Jan. 19. Dr. P. E. McSweeney was elected president of the staff and Dr. Lyman Allen secretary. The staff for the ensuing year is as follows: Consulting surgeons, Dr. J. B. Wheeler, Dr. H. C. Tinkham and Dr. S. E. Maynard of Burlington; Dr. A. T. Arkley of Essex Junction; consulting physicians, Dr. J. N. Jenne, Dr. J. A. Archambault, Dr. R. W. Johnson and Dr. C. H. Beecher, all of Burlington; attending surgeons, Dr. D. C. Hawley, Dr. P. E. McSweeney, Dr. Lyman Allen and Dr. H. R. Watkins, all of Burlington; attending physicians, Dr. F. E. Clark of Burlington, Dr. J. E. Sheehan of Winooski, Dr. C. A. Pease of Burlington and Dr. C. M. Ferrin of Essex Junction; consultant in diseases of eye, ear, nose and throat, Dr. M. C. Twitchell of Burlington; attending specialist in diseases of eye, ear, nose and throat, Dr. F. E. Arnold of Burlington; pathologist, Dr. F. E. Clark of Burlington; dentist, Dr. P. G. Godfrey of Burlington.

The clinics at the College of Medicine when patients will be received for general medicine and surgery and for examination and treatment in the special subjects, are as follows for the remainder of the term: Neurology, Dr. Shirres of Montreal, Wednesdays, 8.30 to 10.30 until April 18; gynecology, Dr. Lockhart of Montreal, Fridays, 9.30 to 11.30 until May 4; dermatology, Dr. Campbell of Montreal, Feb. 21, Mar. 14, Apr. 4, 1.30 to 3.30; pediatrics, Dr. Pisek of New York, daily, Apr. 16 to 27; orthopedic surgery, Dr. Shands of Washington, daily May 7 to 18; eye, ear, nose and throat, Dr. Twitchell of Burlington, Tuesdays and Fridays, 3.30 to 5.30; general medicine, Dr. Jenne of Burlington, Thursdays, 9.30 to 11.30 until May 3; Dr. Beecher of Burlington, Tuesdays, 9.30 to 11.30 until May 1; Dr. Kelly of Philadelphia, Tuesdays, 9.30 to 11.30 and Fridays, 10.30 to 12.30 after May 4; general surgery, Dr. Tinkham of

Burlington, Mondays, 8.30 to 10.30; Dr. Wheeler of Burlington, Saturdays, 8.30 to 10.30.

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### MAINE.

Dr. Frank Parker Perry of Bucksport, died Jan. 14, after a long illness of paralysis, aged 55. He was a graduate of Bowdoin, class of 1871, and of Long Island Hospital College, 1873.

Dr. Warren H. Sherman of VanBuren was married Jan. 24, to Miss Georgia E. Day, daughter of Mr. and Mrs. George Day of Newcastle. The couple will reside at Newcastle where the doctor will open an office.

Dr. A. L. Hersey, a long time practitioner of Oxford, died at the home of his daughter in Boston, Jan. 12, after a short illness. He was an active member and an officer of the Maine Medical Association and was a man greatly beloved by all with whom he came in contact.

The annual report of the Augusta City Hospital, recently published, shows 274 patients admitted during the year, with 160 surgical operations performed. A training school of 17 nurses is maintained in connection with the hospital. During the year \$1000 has been paid on the debt of \$4000.

Dr. Harry M. Nickerson, former city physician of Portland, and assistant surgeon of the Maine naval reserves, also one of the best known tenors in the state, died at the state insane hospital Feb. 5. He had been under restraint for several weeks, and was finally taken to the institution only three days before his death. He was widely known both as a physician and as a musician.

Dr. Hannibal Hamlin, a leading physician of Penobscot county and chairman of the board of selectmen, died Jan. 24 from peritonitis, aged 58 years. Dr. Hamlin was born at Milo and graduated from the Maine Medical School in 1872. He practiced medicine at Milo and for the past twelve years in Orono, and was prominent in local affairs. He leaves a widow and three children.

Dr. Lora D. Dennett, a prominent physician and druggist of Saco, died Jan. 30, after having undergone an operation for appendicitis and hernia. He was 55 years old, a native of Buxton, was graduated from the Harvard medical school and from the College of Physicians and Surgeons in Baltimore. He had practiced in Saco since 1887. He leaves a widow, a daughter and two sons.

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### NEW HAMPSHIRE.

Dr. Charles E. Congdon has been chosen president of the Nashua Medical society; Dr. A. E. Browning and Dr. J. A. Charest, vice presidents; Dr. Arthur L. Wallace, treasurer, and Dr. Ella Blaylock Atherton, secretary.

Adj.-Gen. Ayling will soon issue commissions for H. O. Chesley, M. D., of Dover, to be surgeon, and for Russell Wilkins, M. D., of Concord, to be assistant surgeon of the 2d regiment, New Hampshire National Guards.

At the annual meeting of the Nashua Emergency Hospital Association Jan. 16, Mayor A. B. Jones was elected president, James B. Crowley treasurer and Dr. I. G. Anthoine, clerk. The trustees elected were: Dr. A. W. Shea, Dr. Bradford Allen, Dr. H. L. Smith, James B. Crowley, Dr. B. G. Moran, Dr. S. S. Dearborn, Dr. I. G. Anthoine and William H. Beasom.

The trustees of the Laconia Hospital association have decided to make a systematic effort to raise \$20,000 to erect a suitable hospital building for the city. The trustees have appointed as a soliciting committee Messrs. Dennis O'Shea, W. F. Knight and Charles W. Vaughn, with Rev. W. A. Loyne as an advisory member of the committee. Members of the association have already pledged \$1000 to start the fund. The hospital association is in possession of a site of land of about 10 acres. This land came to the hospital through the generosity of Rev. Jeremiah S. Jewett of Warren, a native of this city. Plans for the proposed new hospital have been drawn by Mr. Taylor of the firm of Kendall, Taylor & Stevens of Boston. The plans provide for a two-story administration building of brick, with a slate roof. The hospital proper is to



be a semi-detached one-story building, connected with the administration building by a corridor. The estimated cost is about \$30,000. Concord; Dr. H. T. Fontaine, Pembroke; Dr. basis of books on foods. Physicians will find of food in sickness and convalescence. Part M. D., of New York.

The annual meeting of the New Hampshire Society for the Prevention of Consumption was held at Concord, Jan. 18, with a gratifying attendance. The principal feature of the meeting was an address by Dr. F. L. Hills of Concord on "The Tuberculosis Problem in New Hampshire." The election of officers for the ensuing year resulted as follows: President, Dr. Ezra Mitchell, Lancaster; vice president, Rev. John Knox Tibbetts, Concord; secretary and treasurer, Dr. F. L. Hills, Concord; executive committee, William J. Ahern, Concord; Dr. H. T. Fontaine, Pembroke; Dr. I. A. Watson, Concord; Dr. Ellen A. Wallace, Manchester; Dr. George C. Wilkins, Manchester; Dr. William T. Smith, Hanover, and Dr. O. B. Douglas, Concord. Chairmen of committees were appointed as follows: Committee on press, Dr. George C. Wilkins, Manchester; committee on legislation, Dr. Ezra Mitchell, Lancaster; committee on printing, Dr. F. L. Hills, Concord; committee on finances, Dr. O. B. Douglas; committee on county education, Dr. F. L. Hills; committee on schools, Dr. Ellen A. Wallace, Manchester.

## AN EPITOME OF CURRENT MEDICAL LITERATURE.

### TUBERCULOSIS.

#### RELATION BETWEEN HUMAN AND BOVINE TUBERCULOSIS.

THEOBALD SMITH (*Boston Med. and Surg. Journal*, Jan. 18) discusses the relation between human and bovine tuberculosis ending with the following conclusions: In the first place the bovine bacillus has been found almost exclusively in children under ten years of age. Phthisis and the other forms of tuberculosis in adults are, so far as we know, almost wholly of human origin. In institutions in which children are cared for, the source of the milk should receive careful attention, and herds belonging to the institution should be free from any traces of the disease. In institutions harboring adults there need be less anxiety on this point, and if all animals of reduced vitality or whose udders are not above suspicion are eliminated, the danger of infection may be regarded as exceedingly small. This standpoint is based upon the following well established facts:

1. With few exceptions, cattle reacting to tuberculin are in an early or latent stage of the disease, during which tubercle bacilli are not excreted in the milk.

2. When the tuberculosis becomes generalized, which frequently happens after parturition, and the udder and uterus become affected, physical examination and microscopic examination of the secretions should detect it.

To these we may add that it is highly probable that we can successfully resist an occasional tubercle bacillus, and that most of us, at one time or another, have ingested without harm a few bacilli in milk or butter. It is equally probable that our resistance may give way at any unguarded moment when our alimentary tract is being daily flooded with bacilli from a tubercular udder. In view of these data it is obvious that a careful periodical inspection of dairy herds cannot be dispensed with, and that such inspections should be made a necessary function of state and local boards of health, or of specially organized bureaus, in order that any advanced cases of tuberculosis may be detected, removed and destroyed. More than this cannot be demanded at present in the interest of public health. Yet it should be the pride of the head of every one of our public institutions to keep the dairy herd free from tuberculosis.

#### TUBERCULAR DISEASES OF THE TONSILS.

J. A. M. HEMMEON (*Northwest Medical Journal*, Jan. '06) writes on the early diagnosis of tubercular disease of the tonsils, pharynx and larynx. While admitting the extreme rarity of primary tuberculous ulceration of the pharynx he states that it may occur. He considers it doubtful if any reliable sign is present prior to actual ulceration. A tuberculous throat is a pale anaemic throat and one may see studded about small greyish nodules, the degeneration of which may cause the ulceration. By pathological examination of one of these nodules it may be possible to reach a positive diagnosis before ulceration. This ulcer can only be confused with syphilis and can be differentiated from the disease by the following points: A syphilitic ulcer is deeply excavated, has few granulations, a red areola, sharply defined edges, purulent secretion and extends deep into the adjoining tissues. A tubercular ulcer is shallow, has much granulation tissue, a faint areola, irregular, so-called nibbled edges, ropy mucous secretion and extends superficially and laterally. Pain is a prominent symptom in tubercular ulceration and will be spoken of later. Extensive syphilitic ulceration is often conspicuous by an entire absence of pain. Tubercular ulcers are friable, easily breaking down and bleeding. The submaxillary parotid and cervical glands are often swollen and tender in tuberculosis. Tonsillar infection while more frequent than pharyngeal tuberculosis, is rare. The subjective symptoms are marked. The voice is not necessarily affected, but may be thick and nasal, due to thickening or paresis of the uvula. Pain is almost invariably present. The pain may extend to the ear through Jacobson's nerve, and is most intense. Patients will frequently be quite unable to swallow and may prefer to starve than undergo the agony accompanying deglutition. Sweating may be absent in early cases and wasting may be delayed until induced by loss of appetite or inability to swallow. The sputum even if it come from an ulcerated surface, may be negative. Scrapings from the ulcer will show the bacillus of tuberculosis. It may be advisable, in an early suspected case, to excise and examine one of



the small nodules spoken of before. In tuberculosis of the larynx the author says we have a condition of much greater frequency and interest. These infections are more often sputum rather than blood or lymph infections. The irritation of the vocal cords through coughing or speaking predisposes them to attack. The symptoms are here again pallor of the mucous membrane, especially in the chronic form. In the rare acute, apparently primary form, there may be hyperaemia. The epiglottis is usually pale, greyish or yellowish, studded with small nodules. If the epiglottis is first attacked it may appear swollen and thickened on its edges, quite characteristically to be followed early by ulceration and pain. Loss of voice may occur early, especially in public speakers, and is due to loss of abductive power. Pain which is marked later especially on deglutition, may be entirely absent early. An examination of the sputum is usually of little use before ulceration. Tuberculin may be a means of making the early diagnosis.

#### TUBERCULOSIS OF THE URINARY TRACT.

G. W. HAWLEY (*Northwest Medicine*, Jan. '06) in a paper on the early diagnosis of tuberculosis of the urinary tract and male genital organs gives the first signs of renal infection as hematuria, pyuria, renal pain and tenderness and symptoms of slight bladder irritation. This last symptom often exists with no apparent lesion of the bladder as shown by the cystoscope except occasional areas of redness or swelling at the ureteral openings. In conclusion he suggests the following rules:

- (1) In all cases of hematuria (especially transient hematurias of doubtful cause) always bear in mind the possibility of tuberculosis.
- (2) Every cystitis, not due to gonococcus or infection from without, should be held suspicious of tuberculosis and be subject to careful observation. (Kummell).
- (3) All suspected cases should be subjected to thorough and repeated examinations.
- (4) Until a positive simple method is at hand for identifying the tubercle bacilli in the urine we are not warranted in claiming their presence, except when found in large numbers, unless we have taken steps to procure a urine free from smegma bacilli.
- (5) In all suspicious cases evidence of tuberculous lesions in other parts of the body should be sought.
- (6) When the slightest doubt remains concerning any case the tuberculin test should be used.
- (7) A diagnosis is never complete until the source of infection has been traced.

#### OPEN AIR TREATMENT OF BONE TUBERCULOSIS.

E. H. BRADFORD (*Boston Med. and Surg. Journal*, Jan. 18) discusses the result of the open air treatment of bone tuberculosis at the Wellesley Convalescent Home. Here in addition to surgical treatment which is described elsewhere the patients are subjected to the open air treatment during the whole year. The results have been most gratifying and remarkable. He details thirty cases showing a definite and permanent cure.

#### BEHRING'S NEW TUBERCULOSIS REMEDY.

A. C. KLEBS, (*Journal A. M. A.*, Dec. 16), remarks on the sensational element in Behring's announcement and also on the fact that there are some ambiguities

of expression that he thinks may perhaps have been intentional. We must take it, he states, that Behring did not mean to say that the remedy he has discovered will cure tuberculosis in all its stages, but that it will prevent in those infected the development of destructive processes, i. e., phthisis. This accepted, he proceeds to analyze his theory of a curative principle. It seems that the curative principle is found in a well-defined constituent of the tubercle bacillus which Behring calls TC, the same designation as that given years ago by E. Klebs to his assumed curative principle contained in tubercle bacillus cultures. The healing action is exercised by the transformation of this TC within the living body cell into a hypothetical derivative which he calls TX because he does not know whether it is a ponderable body or not. A cellular immunity is thus produced, quite different from the ordinarily accepted humoral immunity, and Behring says his clear conception of this was derived from an acquaintance with Metchnikoff's work on phagocytosis. Experimental proofs of this, however, are not given. From Behring's sketch of the method of preparation, Klebs understands that the TC is obtained by grinding up what Behring calls the "rest bacillus," a product remaining after certain toxic and non-toxic groups of substances, including Koch's tuberculin, have been removed. Behring considers it of importance for the comprehension of the therapeutic TC action, that although incapable itself of reproduction, it can produce tubercles that do not caseify or soften, but heal spontaneously. From the above statement of the substance of Behring's address, Klebs deduces certain definite facts. First among these is the fact that Behring finds his curative principle pre-existent in the tubercle bacillus, and this implies a radical change from his formerly expressed views, and is, he claims, a brilliant vindication of the view persistently maintained by E. Klebs and substantiated by him in numerous tests in animals and men. Klebs sees the mechanism of the immunizing process of his TC in a bactericidal action. A. C. Klebs here thinks, from what he knows of Behring's previous studies, that it is probable that he also imagines a more or less direct bactericidal action to take place. On the whole, he says, "it seems probable that Behring's new method is based on principles that have already been more or less elaborated by others, especially by E. Klebs and Metchnikoff." "How much ultimately suffering mankind is to profit can not be predicted, nor can Behring's expressed, though carefully and ambiguously worded expectations mean anything but a plausible, by him yet unproven, hypothesis of a curative principle, applicable in human tuberculosis."

#### DIAMETERS OF THE NORMAL AND THE PHTHISICAL CHEST.

From a study of the chest measurements of 502 normal individuals and in 54 tuberculosis cases, using bony landmarks for locating the length and diameters of the chest, W. A. BESSESEN, Chicago, (*Journal A. M. A.*, Dec. 30), deduces in substance the following conclusions: 1. The use of bony landmarks for locating chest diameters is accurate and easily applied. 2. The use of median values for evaluating anthropometric data saves time and the results are more accurate than the arithmetical average. 3. Important points in the shape of the chest, as well as the movements and capacity may be appreciated by observation of its principal diameters. 4. The development of the human chest passes through various stages from the deep or dorsoventral to the broad or transverse type. 5. In the fetus and young babe, the lower plane gives a greater depth and breadth than the mid-plane. 6. The fetus

under 30 centimeters in length presents a dorsoventral type of chest—it is deep chested. 7. The new-born child represents the transitional type of chest—it is round chested. 8. During the first five years of life the most notable change is the rapid widening of the chest in its transverse diameter—it becomes broad chested. 9. At puberty the chest takes on an increase in length over the diameters—the adolescent becomes long chested. 10. From the eighteenth to the twenty-fifth year the development of the chest is fairly uniform in all its dimensions and represents the highest development—the broad long chest. 11. The dorsoventral diameter increases at an even rate from birth to maturity. 12. The phthisical chest of adult years, in general, shows an arrest in development of the transverse diameter following puberty. 13. The phthisical chest is a narrow one, tending to the rounded form, with a relative elongation. A number of tables are given with the text.

#### EARLY DIAGNOSIS IN BONE TUBERCULOSIS.

PARK WEED WILLIS (*Northwest Medicine*, Jan. '06) writing on the early diagnosis of tuberculosis of the bones and joints says: Muscular rigidity, pain, tenderness and effusion are some of the most important symptoms in a beginning tuberculous disease of the joints, and their relative importance varies more or less with the joint affected. In the ankle joint a little effusion may be the first and only symptom of disease, while in the knee there may be either a little effusion or a little pain or just a general uneasiness about the joint. In the hip we have a slight limp, possibly pain referred to the knee and upon examination slight rigidity of the muscles, with some tenderness upon pressing over the joint anteriorly; while in the spine muscular rigidity will be the most marked early symptom, with possibly tenderness and pain in the distribution of the spinal nerves. Tuberculosis of the bone is often more insidious in its onsets. There may be no symptoms of disease whatever until a neighboring joint is involved. There is likely to be a little pain of varying character which may be very slight, with a slight tenderness and sometimes a little swelling. Any of the bones may be affected but the bones going to form the elbow and knee joints are especially liable to tuberculous disease. The temperature may be slightly elevated but is seldom high. The disease usually occurs in children or young adults and is of course more apt to attack those of tuberculous family or personal history. In the early diagnosis however we may be dealing with a patient as robust and hearty in appearance as one could wish. It is by careful searching when our first symptom is noted, which may be a little pain, a little tenderness or a slight limp that we are able to establish the diagnosis early. There are also available the X-ray and the use of tuberculin. These may be of value in certain cases. As a last resort the author thinks it is wise to make an exploratory incision to examine the condition of the bone.

#### MUNICIPAL CONTROL OF TUBERCULOSIS.

E. O. OTIS (*Boston Med. and Surg. Journal*, Dec. 28) considers the subject of municipal control of tuberculosis. The subject suggests two questions: in the first place are the conditions regarding the disease such and so urgent as to demand active interference on the part of the city and the town authorities? Secondly, if so, what agencies are to be employed in establishing and maintaining an efficient control, agencies such as

legitimately come within official jurisdiction? The first of these questions he thinks is admitted by all. The second question he answers by advocating that the municipality exert itself in controlling the disease in the following five distinct lines; viz.: (a) by requiring notification and inspection of the cases and their habitat; (b) by disinfection; (c) by the isolation of dangerous cases; (d) by the prohibition of promiscuous spitting; and (e) by the free examination of sputum. In addition to this he suggests the following extension of the municipal control: First and by far the most important, the provision of adequate accommodations for the isolation of advanced cases which cannot be properly cared for at home. Second, the free distribution of inexpensive spit cups or paper napkins, with printed directions or oral instructions as to the dangers of the dried sputum. Third, in cities and towns where there are factories and workshops, a medical inspection of the employees, or at least of those who have been noticed by the overseer to cough and spit; and at the same time general instruction should be given to all the employees as to the dangers of promiscuous spitting. Fourth, tenement house inspection with reference to over crowding, air spaces and general hygienic conditions. Fifth, in the medical inspection of schools, especial attention to be given to the detection of tuberculosis among the scholars, the teacher co-operating with the medical inspector, and scholars showing any symptoms of the disease to be submitted to a careful examination.

#### STATISTICS OF TUBERCULOSIS.

A. P. FRANCINE, (*Journal A. M. A.*, Nov. 18), reviews the statistics of consumption, showing that it causes one-tenth of all the deaths in this country, and a still larger proportion in Europe. This, however, is not all the evil, for tuberculosis attacks every organ of the body and passes under many different names, filling with its indirect results our hospitals, asylums, prisons and reformatories. The means and methods for combating this evil are to be sought in individual prophylaxis and state regulation, the former by proper care and hygiene of the patient and the latter by the establishment of public sanatoria for the poor, the aiding of private efforts in this direction, and by suitable and properly enforced registration. The most important element of individual prophylaxis is the destruction or disinfection of the sputum of the tuberculous by fire, boiling water or steam, the disinfection of infected rooms by formaldehyd gas and local measures, such as absolute cleanliness as regards dust and dirt and disinfection of articles contaminated by use. The tuberculous patient should sleep alone with no unnecessary drapery or furniture in his room and with the windows open night and day. Other general measures than those already mentioned are government inspection of dairies, slaughter houses and herds and the formation of societies for the prevention of tuberculosis. With due care of the patients as indicated and thorough destruction of sputum, the danger of individual contagion is slight.

#### MEDICINE.

##### SALINE SOLUTION IN PNEUMONIA.

J. MADISON TAYLOR (*Med. Record*, Jan. 13) discusses the use of saline solution in pneumonia. He cites cases of its use in children with remarkable success and states that in adults the use of saline solution even in desperate cases as advocated by Henry, Penrose, Tyson, may be followed by convalescence, proving its power and indicating how greatly the chance of success would be increased if it were used before the danger period.



He calls attention to the method of administration introduced by Todd which will serve greatly to facilitate the use of saline solution. This method is to administer it by the mouth as a lemonade, each glassful (six or eight ounces) containing 10 gr. sodium chloride and 5 gr. potassium bicarbonate and a teaspoonful of lemon juice. This is given every two hours to a child.

#### TREATMENT OF PNEUMONIA.

DR. ROBT. A. HARE (at a meeting of Med. Assn. of Greater New York) urges that in the treatment of pneumonia remedies be administered only when very definite and clear indications for their use are present. In many instances, spurred on by the anxiety of friends, the physician is inclined to give medicines continuously throughout the entire course of an attack of croupous pneumonia, forgetting that remedies which are powerful enough to do good, may under certain circumstances, be powerful enough to do harm. Further it must be recognized that our means of treatment cannot be curative, and should be directed simply to the support of the system, and the regulation of its functions, until the disease has run its course. In many instances rapidly-acting but fleeting, circulatory stimulants, such as Hoffman's anodyne and aromatic spirits of ammonia, are all that are needed to bridge over temporary periods of depression. These remedies are not advantageous when used for a long period of time, as they lose their effects and are also apt to disorder the stomach. If digitalis is employed it should always be in the form of a preparation which has been physiologically tested, since other specimens of digitalis often vary greatly in their pharmacological activity. Of the remedies which are best for the combating of collapse and circulatory failure strychnine and atropine undoubtedly rank highest; the atropine being particularly valuable in most cases in which there is a gaseous pulse with relaxed blood vessels. Digitalis often fails because the heart muscle has undergone degeneration as a result of the toxemia, or because the high temperature of the disease prevents it from exercising its physiological properties. Mild alkaline diuretics, for the purpose of flushing the kidneys, are useful and hypodermoclysis may at times be a valuable resource. In conclusion, the author once more urges upon his hearers the necessity of avoiding medication except in the presence of very direct indications for the use of certain drugs. But, on the other hand, he advocates the free administration of remedies which were indicated to meet special conditions arising in the course of the disease. While on the other hand we must not be too active, it is an equally great mistake to be unduly passive in the presence of such a grave illness. Nitroglycerine, often used in pneumonia as a cardiac stimulant, is always abused under such circumstances, since it is a circulatory relaxant and never active as a true stimulant. This is a point overlooked by many members of the profession. The only indication for the employment of nitroglycerine in pneumonia is when the arterial tension is unduly high, and the heart is consequently called upon to do an excessive amount of work.

#### DISEASES OF THE MYOCARDIUM.

DALAND (*N. Y. Med. Journal*, Jan. 6) gives the diagnostic points of myocardial diseases as follows: The most important symptoms of cardiac insufficiency in myocardial disease are tachycardia, irregular or feeble small pulse, gallop rhythm, dyspnea, which may be continuous, paroxysmal, nocturnal or induced by slight exertion, arrhythmia, bradycardia, cardiac pain

or distress, angina pectoris, palpitation, edema, cough from pulmonary congestion and Stokes-Adams syndrome. Tachycardia, feeble small pulse, dyspnoea, and arrhythmia are symptoms that point towards myocardial disease. Krehl considers arrhythmia as pathognomic, but others believe it evidences involvement of the auricles. Arrhythmia shows a weak heart, which is usually enlarged, with more or less edema. When in the absence of renal disease, the symptoms of acute cardiac insufficiency occur, with or without valve murmur, in the course of infectious fevers; pyaemia, gonococcus infection or acute pericarditis or endocarditis, together with signs of an enlarged weak heart, acute interstitial or parenchymatous myocarditis may be present. Some believe that the failure of the pulse to increase in frequency in changing from the recumbent to the sitting posture is an early sign of myocardial disease. Fatty heart may occur in those who appear well nourished, with pallor or cyanosis, dyspnoea, especially on exertion, vertigo and attacks of palpitation when at rest or after exertion. The pulse is soft, very rapid, nonresistent, hypotension, and sometimes tachycardia, and in certain cases bradycardia, with the pulse rate of 48 per minute. Accentuation of the pulmonic second sound may be caused by congestion of the venous system, shown by the presence of hemorrhoids, varicose veins, etc. The apex beat is usually invisible and cannot be felt and the area of cardiac dulness is mostly enlarged. The muscular element of the first sound of the heart may be greatly diminished; in other words, the physical sounds of a weak heart. The diagnosis depends upon the existence of obesity, the habits of the patient, cyanosis, and angina pectoris, especially occurring while at rest, bradycardia, tachycardia, and arrhythmia. Brown atrophy of the heart, when it occurs in the aged or during wasting diseases, may be suspected, when in addition to the symptoms of cardiac insufficiency, physical examination shows a decrease in the size of the heart. When this degeneration is secondary to chronic valvular disease, the heart may be enlarged.

#### CHOREA.

AMBROSE L. RANNEY (*N. E. Med. Monthly*, Dec. '05) concludes an article on eye treatment in chorea as follows:

1. Choreic subjects belong to one of two classes: (a) Those who tend to get well under almost any treatment or even without treatment, and (b) those who fail to get relief from any medicinal aid. The latter tend to run a chronic course, usually one of unfavorable progression.
2. The chronic form of chorea is one of the most serious and hopeless forms of nervous maladies, unless the exciting cause be recognized early and relieved. It is not infrequently associated with epilepsy or with mental impairment.
3. The pathology of chorea is not known. No one has ever proved that an organic lesion was essential to its development.
4. The percentage of hypermetropia (usually latent) in choreic subjects is extremely large (apparently about 70%).
5. An investigation for latent heterophoria should always be made in choreic subjects with the greatest care and patience.
6. The relief of marked heterophoria should be finally attained only by graduated tenotomies upon the muscles exhibiting abnormal tension, or by advancement of the tendons of the muscles exhibiting defective power.
7. Prismatic glasses are not curative. They should not as a rule be prescribed for constant use.



## RELATION OF BACTERIA TO THE PRODUCTION OF GALL STONES.

A. J. LARTIGAU (*California State Journal of Medicine*, Jan. 1906.) contributes a valuable article on this subject. After reviewing the experimental work which has been done he gives an account of his own work describing seventeen experiments to ascertain the role of non-infected foreign bodies in the gall bladder; seventeen experiments to ascertain the effect of bacteria; sixteen experiments to determine the effect of bacteria and sterile foreign bodies; ten experiments to ascertain the effect of mixed cultures; twelve experiments to ascertain the effect of the introduction of sterilized masses of bacteria. From these experiments he concludes (1) that foreign bodies do not induce the formation of calculi; (2) that bacterial infection particularly when accompanied by conditions of stagnation of the bile are productive of cholelithiasis; (3) that dead bacteria are not productive of calculi. He was unable to say that one organism (of these used) favored the formation of calculi more or earlier than another or that mixed infection favors earlier development of stones than single infection. He concludes that in the cholecystitis of gall stones the infection takes place much more often through the portal system than through other channels.

## A NEW TEST FOR ACETONE IN THE URINE.

But few of the known methods of testing for acetone in urine permit of operating with the urine itself; one is usually obliged to distill the urine first and test the distillate, and then, during the distillation, a portion of the acetoacetic acid of the urine is transformed into acetone. The procedure now recommended by V. Frommer (*Berliner klin. Wochenschr*) consists in taking 10 c. c. of urine, adding first 1 gram of potassium hydroxide and then 10 to 15 drops of a 1 in 10 alcoholic solution of salicylic aldehyde, and heating to 70 degrees C. If the urine contains acetone, a reddish-purple ring forms where the two layers of liquid come into contact. If the salicylic aldehyde be added after complete solution of the potassium hydroxide, the liquid will turn yellow in color, then reddish-purple and finally crimson. The test is said to be very sensitive, and no other constituent of the urine responds to it, and the reaction is obtained in all cases where Lieben's and Legal's tests afford positive results.

## SURGERY.

## STERILIZATION OF CATGUT.

W. H. WATERS (*Med. Record*, Jan. 6) gives the following technique of sterilizing catgut. For this method which was devised by Wesselhosft the author claims simplicity, cheapness and efficacy. "The gut is cut into the desired lengths (from 24 to 30 inches commonly). Each strand is wound about two fingers and put into a small paper envelope which is not sealed. Two of these small envelopes, each containing a strand of gut, are put into one slightly larger, two inches square and this envelope is sealed. These envelopes are of strong bond paper, and in their manufacture their angles and seams are accurately closed and gummed. The outer envelope is a little more than two inches square, thus making what is known as a safety lap closure. The envelopes, filled and sealed, are now put over a radiator or register to be thoroughly dried out. After being dried they are ready to steri-

lize. The sterilizer is a square brass box, tinned inside and out, with an inside measurement of  $2\frac{1}{4}$  inches on a side. The cover, which is separate, is fitted with a rubber gasket, and is fastened on tight by four steel bolts and thumb screws. The sterilizer is cast square to fit the envelopes in order to economize the alcohol. The envelopes containing the gut are placed in a wire basket made to fit, and so carried into the sterilizer. Absolute alcohol (99.8-10 per cent) is now poured in up to the point which is marked by the upper end of the basket. The cover is screwed on and the sterilizer is hermetically sealed. The basket is a little less than nine-tenths the length of the sterilizer inside, and the end of the basket marks the point to which the alcohol is poured. Alcohol boils at 172 degrees F., and when heated to 212 degrees it expands a little less than one-tenth of its volume. The sterilizer filled with the envelopes and with alcohol, is immersed under boiling water and left there for one hour. This raises its contents to 212 degrees and develops a pressure of twenty-five pounds to the square inch, which must squeeze hot alcohol through every fiber of the gut. The sterilizer is taken out at the end of the hour and placed in cold water for a few minutes to reduce the temperature and relieve the pressure before opening. It is then opened and the basket containing the envelopes is pulled out. The envelopes are dropped into a towel and again put to dry which takes fifteen or twenty minutes. The gut is now ready for use. Each strand is sterile; it is in a sterile envelope which is in another envelope, and it can be kept sterile indefinitely and carried about conveniently. When desired for use an attendant opens the outer envelope and bends back the tongue.

## TO RELIEVE THE NAUSEA OF ANESTHESIA.

DANIEL MORTON (*Med. Herald*, Jan. '06) contributes a paper on the treatment of patients after abdominal operations. He considers the vomiting after anesthesia partly due to the effect of the anesthetic on the center in the brain, and partly due to the partial cessation of peristalsis which so often follows handling the bowels. It has been suggested that about five ounces of water be swallowed by the patient just before the anesthesia, for the purpose of holding in solution that part of the anesthetic which is eliminated by the mucous membrane of the stomach. It is the common practice of the author to place over the nose after cessation of chloroform anesthesia a cloth wet with vinegar. Crushed ice swallowed whole will often relieve the situation. Lower the head for the condition also. But of all remedies cold champagne gives greatest satisfaction. Nothing however will do much good if the patient is in the so-called "bilious condition" at the time of the operation. It is not proper to severely purge a patient for the sole purpose of removing this condition so that the best we can do is to give high enemata and unload the colon. This alone is often effective. In cases where the digestive tract is not the seat of operation, a thorough catharsis can often be accomplished, all fecal matter being completely removed and a good quantity of bile thrown into the bowel. No fermentation is present then, and thus all sources in the digestive tract which provoke vomiting are removed. If the patient can be prepared in this way for forty-eight hours it is seldom the case that vomiting occurs, though any patient may be nauseated. The straining and violent motions of vomiting are very dangerous. They may break down a limiting pus wall. It is therefore an important factor in post operative treatment to prevent it. When once the patient is anesthetized he should be kept quiet. The trans-

fer to the operating table from the cart, and from the operating room to the bed is undoubtedly an exciting cause in producing vomiting. These patients should not be handled any more than is absolutely necessary. It is well to remember that the evaporation point of chloroform is below that of the body temperature, and hence is slowly eliminated and the vomiting thereby protracted.

### THERAPEUTICS.

#### ANTIGONOCOCCUS SERUM IN GONORRHEAL RHEUMATISM.

J. ROGERS, New York City (*Journal A. M. A., Jan. 27*), reports a number of cases successfully treated by the antigonococcus serum made by Dr. John Torrey and elsewhere described by him. The ordinary treatment is notoriously unsatisfactory, and while the serumtherapy has its limitations like all others, it appears to be a real benefit in these cases. It should be remembered, however, that it has little or no effect on existing urethritis, and so long as any traces of this persist there is danger of a recrudescence of arthritic symptoms. He calls attention to some of the difficulties of diagnosis, especially in women, in whom it is often undetected, and states that the use of the serum may be of value, as it will relieve the pain in a few days if the patient is gonorrheal. The possibility of a complication by another infection must of course be considered, but most joint and serous membrane affections occurring in the course of a gonorrhea can usually be attributed to the gonococcus. In any suspicious case he advises the injection of from 20 to 60 minims every day or every other day, beginning as soon as possible after the arthritic symptoms appear and continue as long as the pain and disability last. Aside from an occasional erythema, he has observed absolutely no ill effects. The earlier the disease is recognized and the treatment commenced the better of course are the results.

#### ANTIGONOCOCCUS 'SERUM.

J. C. TORREY, New York City (*Journal A. M. A., Jan. 27*), gives a preliminary report of good results in the treatment of gonorrheal rheumatism with an antigonococcus serum made by the inoculation of large rabbits with cultures from an acute, untreated case of gonorrhea. The best serums were obtained by inoculations at intervals of five or six days with cultures from six to fifteen days old. The rabbits were always inoculated intraperitoneally. While he thinks that the most important factor in the good results obtained with the serum is its bactericidal action, he is inclined to believe that there is also an antitoxic action. Experiments with guinea-pigs seemed to indicate this, and clinical evidence also pointed the same way. In some of the cases of gonorrheal rheumatism treated with the serum there was a decrease of pain in the joints within twenty-four hours after the first administration, and this seems most reasonably explained by a neutralization of some of the gonotoxin. Mainly, however, the serum acts, in his opinion, by destroying the bacteria. It seems possible, he says, that it supplies enough immune bodies to dispose of the comparatively few gonococci in the chronic forms of the disease, though not enough to bring about the destruction of the great number of gonococci that are present in the urethra in acute gonorrhea. Experimental evidence fully to substantiate this theory is yet lacking. The serum, however, has been found to contain both precipitins and agglutinins for the gonococcus.

### THE RESPONSIBILITIES OF SURGERY

The consulting surgeon can not but be impressed by the frequency of useless or worse than useless operations. He sees too often the unfortunate results of hastening the patient into operative procedures based on errors in diagnosis and in prognosis. On the other hand, he sometimes sees a patient refused an operation which is called for in the most positive tones.

Perhaps the most common error, as observed by the consulting surgeon, is the failure to detect at the earliest possible moment those internal lesions which demand, as the only chance of recovery, instant operation. The mortality in these cases is the mortality of acute abdominal surgery today. Excluding acute abdominal emergencies and cerebral hemorrhage of traumatic origin, the mortality of surgery is trifling. The responsibility of deciding to call the surgeon must rest, of course, first on the family and then on the physician. Too often, however, the necessity of intervention is not recognized even by the surgeon. One seldom sees a newspaper that does not contain an account of the loss of a life which might have been saved by prompt and skillful surgery.

The task before me is a serious criticism of what is going on in every community. I do not single out any community or any man. There is, in my mind, no doubt whatever that surgery is being practiced by those who are incompetent to practice it—by those whose education is imperfect, who lack natural aptitude, whose environment is such that they never can gain that personal experience which alone will really fit them for what surgery means today. They are unable to make correct deductions from histories; to predict probable events; to perform operations skillfully; or to manage after-treatment.

The chief source of trouble lies in the ambition—perfectly laudable—which so large a proportion of medical men possess, to become surgeons. The hospitals in many small communities have on their staffs every medical man of prominence in town, all of whom take alike the medical and the surgical services. The reason for this is that the co-operation of every physician is necessary in order that the hospital may be built. A place on the staff becomes a *sine qua non*.



The truth is that in small places the two or three men best fitted for surgery should be made the surgeons of the place, and to them should be referred all surgical work. With the great development of surgery today, it is, indeed, a sparse community which can not support two surgeons. It is, I think, incumbent on these men to give up to the others their medical practice. In this way alone may surgeons become fitted for the responsibilities of surgery in the less populous areas; and in this way they will receive an education and experience which may make them of national or even international reputation.

But may we not depend on a process of natural selection in the development of the surgeon—a survival of the fittest? This process will, no doubt, prove in time effectual, but in the meanwhile hospital positions and other opportunities will remain in the hands of those unable properly to utilize them. We have time and again seen positions held to the age limit by those on whom the great opportunities of a large clinic were almost wholly wasted.

The man who by nature is endowed with the gifts which make him a good practitioner of surgery will not fail to make the best use of those gifts, whatever his environment.—*Maurice H. Richardson, M. D., in the Journal A. M. A.*

## THERAPEUTIC HINTS.

**SHORTENING THE QUARANTINE IN DIPHTHERIA.**—The quarantine period in diphtheria is commonly distressing because the children are infectious for a long period after all symptoms have disappeared, and after they feel as well as ever. All that is necessary to shorten this period is to secure a disappearance of the Klebs-Loeffler bacillus from the secretions of the nose and throat. Recently French observers have been experimenting along this line, and it is now announced that by means of dried serum the germs may be banished from the secretions of the throat within a period averaging six days subsequent to the disappearance of the membrane.

The dried serum is prepared with gum in cachets, and directions are given that one cachet be slowly dissolved in the mouth every

hour. It is important that it is not quickly chewed and swallowed, but that it be dissolved slowly, so that the effect be maintained as long a time as possible. In case of involvement of the nasal passages, the dried serum may be insufflated.

No possible harm can follow the trial of the plan, and as it cannot provoke error in the bacteriological test, we can see no objection to it, and there is certainly much to commend it.—*Medical World.*

An excellent expectorant combination in all forms and at any stage of a bronchial catarrh is:

Ammonia carbonate .....	16 grains
Fluid extract of squill .....	
Fluid extract of senega. of each.....	$\frac{1}{2}$ dram
Paregoric .....	3 drams
Syrup tolu .....	$1\frac{1}{2}$ ounces

Mix, and direct a teaspoonful in water, every few hours.

A dry bronchial catarrh is greatly benefited by:

Potassium iodid.....	5 to 10 grains
Elix. chinchona .....	20 minims
Wine of tar, q. s. ad.....	$\frac{1}{2}$ ounce

Mix, and order one such dose three times a day.

In fetid bronchitis, the following inhalation is beneficial:

Beechwood creosote .....	1 dram
Eucalyptol .....	1 dram
Tinct. benzoin comp.....	2 ounces

Mix, and direct a teaspoonful to be added to a pint of boiling water, and the steam inhaled once or twice a day.

To abort an attack of asthma, use a hypodermic of morphine sulfate,  $\frac{1}{4}$  grain, with atropin sulfate, 1-100 grain, and crush a pearl of amyl nitrite under the nose. In the absence of amyl nitrite, chloroform may be used cautiously. Whiskey acts well in most cases, especially if given in strong, black, hot coffee, but the danger of acquiring the habit must be remembered.

The brown mixture lozenges sold by all dealers, with or without the addition of ammonium chlorid, are the least expensive and most generally convenient and useful form in which a "routine" cough treatment applicable to nearly all ages and conditions, can be carried by the country doctor in his winter rounds.



## BOOK REVIEWS.

**SKIN DISEASES AND INTERNAL DISORDERS**, with observations on diet, hygiene and general therapeutics. By L. Duncan Bulkley, A. M., M. D., physician to the New York Skin and Cancer Hospital, consulting dermatologist to the Randall's Island Hospitals, to the Manhattan Eye and Ear Hospital, and to the Hospital for Ruptured and Crippled. Published by Rebman Company, New York and London. Pages, 175, price \$1.50.

**THE INFLUENCE OF THE MENSTRUAL FUNCTION ON CERTAIN DISEASES OF THE SKIN.** By L. Duncan Bulkley, A. M., M. D., physician to the New York Skin and Cancer Hospital, etc. Published by Rebman Company, New York and London. Pages 118, price \$1.00.

Out of his large experience as a dermatologist, Dr. Bulkley has observed and investigated many phases of disease conditions which a less practiced man would have no opportunity to do. The two books just published by Rebman Company do not attempt to describe diseases of the skin, but they make a valuable adjunct to the regular text book and are full of practical suggestions for the management of these very common yet little understood cases.

**WILLIAMS ON FOOD.** Food and Diet in Health and Disease. A manual for practitioners of medicine, students, nurses and the lay reader. By Robert F. Williams, professor of principles and practice of medicine in the Medical College of Virginia, Richmond. 12mo volume, 392 pages. Cloth, net, \$2.00. Lea Brothers & Co., Publishers, Philadelphia and New York, 1906.

The author has succeeded in making a very useful book by leaving out most of the perplexing technicalities which so often form the basis of books on food. Physicians will find this a book which can be recommended to patients as a guide to the preparation and use of food in sickness and convalescence. Part I—Food in Health—explains the needs of the body for different kinds of food and takes up the methods of cooking in a way at once interesting and instructive. Part II—Food in Disease—deals with the diet best suited to abnormal conditions, taking up each of the common diseases, with suggestions as to menu and general feeding. Finally there are many recipes which cannot but be appreciated by nurses or physicians who are called upon to give instructions for the nourishment of their patients.

## PAMPHLETS RECEIVED.

**RECENT EXPERIENCES IN KIDNEY SURGERY**, and the Utility of Diagnostic Aids, by Charles H. Chetwood M. D., of New York.

**PROSTATISM WITHOUT ENLARGEMENT OF THE PROSTATE**, its Diagnosis and Treatment, by Charles H. Chetwood, M. D., of New York.

## SOCIETY MATTERS.

## MINUTES OF THE 92nd ANNUAL MEETING

## OF THE

## VERMONT STATE MEDICAL SOCIETY

Held in Burlington, October 12 and 13, 1905.

(Continued from Page 22.)

W. H. Giddings of Bakersfield then gave an obituary of W. R. Hutchinson of Enosburg Falls.

J. N. Jenne of Burlington presented an obituary of W. D. Huntington of Rochester.

C. W. Howard of Shoreham read an obituary on the life of William N. Platt of Shoreham.

The obituary of C. C. Rublee of Morrisville was given by George L. Bates of Morrisville.

The secretary then read the obituaries of E. P. Fairman of Hardwick written by S. E. Darling of Hardwick and of E. B. Mack of Woodstock prepared by F. T. Kidder of Woodstock.

E. R. Campbell presented a resolution in recognition of the gift of Hon. Redfield Proctor of a fund for the erection and maintainance of a hospital for tuberculosis. Referred to the house of delegates.

Dr. E. R. Campbell, Bellows Falls:—In looking over the officers of this association, I do not find any committee on resolutions. I hope before this meeting closes, that a special committee on resolutions will present or instruct the secretary to present a vote of thanks to Senator Proctor for his most munificent gift of \$150,000 for the erection of a building for tubercular patients.

Dr. E. M. Crain, Rutland:—I second the motion with the addition that it be published in the papers so that the people of Vermont may know how much we appreciate the generosity of Senator Proctor.

Dr. P. E. McSweeney:—That resolution has already been brought before the society and will be reported upon tomorrow morning.

Dr. Henry D. Holton, Brattleboro:—As there is some little time between now and your dinner hour, it may be a good time for you to visit the Laboratory of Hygiene. We shall certainly feel sorry to have any of you go away without going there, and it will be open at all times for you to inspect, yet I would suggest that now might be a favorable opportunity. I hope you will all go there before the meeting is over.

Dr. G. H. Gorham, Bellows Falls:—We have a book of registration which I hope and trust every member will sign so we can have a complete list of those in attendance at this meeting.

Dr. E. R. Campbell, Bellows Falls:—I move we now adjourn so we can accept Dr. Holton's invitation.

Adjourned at 11 A. M.

## AFTERNOON SESSION.

Called to order at 2.10 P. M.

Dr. O. D. Eastman of Woodsville, N. H., was presented to the society as a delegate from the New Hampshire Medical Society and who responded as follows:

Mr. President and Gentlemen of the Vermont State Medical Society:—I have nothing of importance to say except that the New Hampshire Medical Society sends their greetings to the Vermont Medical Society and I am very happy to extend the best wishes of our society to you and to be with you again. I have attended your meetings several times and I always enjoy being with you.

Dr. Wallace M. Pierce of Providence, R. I., delegate from the Rhode Island Medical Society was introduced and replied as follows:

Mr. President and Gentlemen:—It gives me pleasure to bring the greetings of the Rhode Island State Society to you. It is doubly a pleasure for me to be here and meet with you as I was formerly a member of this society. I don't think I can say anything which will interest you and as you have many good speakers on the program, I will not take any more of your time. I again extend the hearty greetings of my society.

H. A. Hildreth of Bethlehem, N. H., was cordially welcomed as the second delegate from New Hampshire and who briefly replied:

Mr. President, and Gentlemen:—I have nothing to say only it gives me great pleasure to meet the physicians and surgeons of Vermont. I am not the regular delegate, but I am taking the place of Dr. McGreggor, who was appointed the regular delegate.

M. L. Chandler of Barre then presented the vice-president's address entitled "The Physician as an Educator." After an introduction by the president, Dr. W. C. Abbott of Chicago ably discussed the address. Closed by O. G. Stickney of Barre.

The next paper on the program that was read was by E. R. Campbell of Bellows Falls entitled "Diagnosis and Treatment of Some Chronic Diseases." Discussion opened by H. D. Holton of Brattleboro and followed by O. G. Stickney, M. R. Crain, W. C. Abbott, C. F. Camp and W. N. Bryant; closed by Dr. Campbell.

S. E. Maynard of Burlington gave a paper on "A Few of the More Uncommon Acute Infections with Surgical Treatment." Discussion opened by M. R. Crain followed by Lyman Allen and R. E. Welch, W. W. Townsend and G. G. Marshal; closed by Dr. Maynard.

Dr. George L. Bates of Morrisville at this time presented to the society the records of the society extending from its organization in 1814 up to 1851 and which had been in the possession of the late Dr. C. C. Rublee and family for many years and at his wish and request was given into the hands of the society once more. The president accepted the gift in behalf of the society.

Dr. P. E. McSweeney:—For many years our society has been looking back for the records and I am pleased to state to you here today, that the records of this society for the years 1814-1851 have recently been found and Dr. G. L. Bates of Morrisville wishes to present them to this society again.

Dr. G. L. Bates, Morrisville:—I have in my possession here, relics of the past. This book came into my possession through Dr. C. C. Rublee, deceased, who

got it from his grandfather, Dr. Charles Clough, of Montpelier, who was at one time the secretary of this society. It was with a great deal of interest that I discovered this book and read it. You will find the first minutes made in 1814 in the original hand writing of the secretary and the records are complete down to 1851. From that time, however, there are no records. Upon the fly-leaf of this book, is a circular which was probably the first requirements for the practice of medicine in this state. It was the wish of Dr. Rublee, who was my particular friend, that this book be returned to the secretary of this society—its rightful owner—and I take great pleasure this morning in presenting this book to you.

Dr. P. E. McSweeney:—In behalf of the State Society, I thank you, Dr. Bates, for the return of these records and I would suggest that some record be made of its return to this society.

Dr. Charles L. Scudder of Boston then presented a very interesting and instructive paper on "Stenosis of the Pylorus in Infancy; the technique of Gastro-enterostomy." With lantern slides he brought out his points very clearly. On motion of D. C. Hawley, Dr. Scudder was elected an honorary member of the society.

Adjourned at 5.30 P. M.

## EVENING SESSION.

Called to order at 8 o'clock, M. L. Chandler, vice-president in the chair.

P. E. McSweeney of Burlington then gave the president's annual address entitled "Tumors Complicating Pregnancy." Discussed by H. H. Swift and J. F. Blanchard; closed by Dr. McSweeney.

The discussion of Dr. Scudder's paper was then taken up by C. W. Strobell and closed by Dr. Scudder.

Adjourned at 9.00 o'clock.

At ten o'clock all repaired to the Van Ness House where a banquet was served to about one hundred and fifty, including the ladies.

W. Scott Nay acted as anniversary chairman and the following gentlemen responded to toasts at the post-prandial exercises: J. N. Jenne, J. Henry Jackson, Rev. Geo. Y. Bliss, W. N. Bryant, C. S. Caverly, H. H. Swift, H. D. Holton, H. E. Lewis, J. S. Hill and C. A. Pease.

(To be continued.)

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The Burlington Medical Publishing Company is prepared to furnish physicians with all kinds of medical books, card indices and to do printing of all kinds. Samples and prices will be furnished upon application. The use of a card index among physicians is on the increase and we are prepared to furnish you with the very latest forms of this labor-saving and time-saving device.

It is the publisher's intention to have a column of small advertisements in future issues of this journal—advertisements such as—For Sale: To Exchange: Help Wanted: Agents Wanted, etc. These advertisements will reach the public at small cost to the advertiser and will be productive of results. Rates will be quoted upon application.



## ORIGINAL ARTICLES.

### STENOSIS OF THE PYLORUS IN INFANTS.\*

*By Charles L. Scudder, M. D., Surgeon to the Massachusetts General Hospital, Boston, Mass.*

We are all practitioners. We are either interested in the medical treatment of disease or in its surgical treatment and each of us, I think, is interested in the very great progress which has taken place in the last few years in the treatment of the diseases of the stomach. This progress has been very rapid during the last five or ten years. Previous to that time, diseases of the stomach had been almost exclusively medically treated. During this time, surgery has taken an active part in their treatment.

The progress which surgery has made in the diagnosis and the treatment of diseases of the stomach has been largely due to the perfection in technique of operative work. The avoidance of hemorrhage and soiling of the peritoneum and gentleness in manipulation of the parts, have contributed to a lower mortality. The surgeon has opened the abdomen and studied the living pathology of the stomach. It seems to me wise to say this, and I believe it very strongly and emphatically, that the general practitioner who is interested in the practice of medicine can learn more to-day from his attendance upon surgical clinics than in any other way. I was visiting the clinic in Rochester, Minn., and met men whom I was somewhat surprised to learn were practicing medicine solely. I said to one: "Why do you come to a surgical clinic?" He replied: "I find that my knowledge of medicine is broadened and I am a more able practitioner, for I see the results of disease and the effects of disease far more accurately than I have been able to in previous years. This knowledge of disease helps me in my diagnosis."

\*Stenographic report of an address given before the Vermont State Medical Society, Oct. 13, 1905.

The fact is, surgery has contributed to the advance of our knowledge of the diseases of the stomach, in two directions. First, we know to-day that cancer of the stomach is a curable disease. It has been demonstrated in different clinics abroad and is being demonstrated in clinics in our own country also that cancer of the stomach is a curable disease. This fact should become a popular notion. Practitioners should come to recognize that the cases of chronic dyspepsia which have been treated with this and that remedy are possibly cases of beginning cancer and that it is these cases which should go to the surgeon for treatment and not to the general physician. In one other direction, surgery has made an advance. Surgery has demonstrated that gastric ulcer is probably the antecedent condition to gastric cancer in a large number of cases. So that we may look upon the surgery of the stomach as the surgery of gastric ulcer and gastric cancer.

I want to say a few words to-day about a non-malignant disease of the stomach which has nothing to do with ulcer or cancer but has to do with an acute obstruction of the pylorus. We know that both ulcer and cancer show the very gravest symptoms when they attack the orifices of the stomach. The disease to which I refer is stenosis of the pylorus occurring in the new born child. This condition up to within a few years has been almost unknown. Beardsley of New Haven recorded the first known instance in 1788. In 1841 the second case was reported. In 1843 the third case was reported and then not another until 1888, this by Hirschapmug, so that our knowledge of recent cases dates back to 1788. The disease is more common than we suspect. I personally have been interested in this particular disease for a little over a year. This summer within a period of five or six weeks I saw two cases of this disease. Therefore, my experience is very limited. I think many of the cases that exist are unrecognized.

Of fifty-five autopsies, the notes are very uniform, practically the same findings appear in every case, viz., a tumor about the size of the end of one's thumb, without adhesions, without signs of previous ulceration, perfectly moveable. The structure of this tumor is a constant one. There is because of the obstruc-



tion, a hyperplasia of the wall of the stomach and this precedes a dilation which results if the child lives long enough. The lumen of the pylorus is much diminished. The mucous membrane of the walls is hypertrophied; the small intestine is collapsed. In addition to these fifty-five autopsies, there have been sixty operations performed. The surgeon has found the pyloric tumor and also the secondary changes in the stomach. Each of the 115 cases has a clinical story recorded and the signs and symptoms are these: First, vomiting. It occurs usually soon after birth, and on an average within the first seventeen days. It may not be until the third week in the child's life, but vomiting is the first symptom. It is quite different from the spitting up of milk commonly seen in young babies from an overfull stomach. It is a vomiting which is forcible. The contents of the stomach are projected. The vomited material contains no bile. The vomiting occurs in breast-fed children, when we would least expect it. The amount vomited varies, but is usually the amount of the previous feeding.

Associated with the vomiting there is a visible peristalsis of the stomach. This peristaltic wave may be detected at the time of feeding the baby. It must be looked for with great care or it may escape detection, despite its violent character. The abdomen should be bared just as the baby is being fed. The baby should be in a good light so that all shadows may be removed. The stomach will be seen to violently contract, the contraction wave extending from the left side of the abdomen across to the right side near the pylorus. At this time, as the peristaltic wave reaches the pylorus, the pyloric tumor will be most easily detected, for it is brought into prominence over nearer the abdominal wall. The child is ravenously hungry. The breath is sweet. The characteristic signs of pyloric stenosis, then, are vomiting, visible peristalsis and hunger, with pyloric tumor.

The diagnosis is, of course, difficult. Particularly so if the obstruction is not complete, and it is in these cases of partial obstruction that the mistake is liable to occur. I know of no disease in which the accurate observation of facts is of more importance for the making of a diagnosis. The indigestions of infancy are the only diseases with which this disease is liable to be mistaken. The positive signs of pyloric obstruction being present and the char-

acteristic signs of infantile indigestion being absent, a diagnosis can be arrived at in most cases. The prognosis of this disease is absolutely fatal unless treated surgically. There are on record a few cases treated medically which recovered, but there is no evidence that they had the disease. There are cases which are said to have had the disease and to have been cured, which subsequently have been found not to have been cured. Of those treated medically the mortality is about 80 per cent.

The treatment best suited to these cases is a gastroenterostomy, done posteriorly to the colon. These cases will always present themselves as emergency operations. Care in the preparation of the little patient before operation and the taking of every precaution to avoid shock at the time of operation, together with an accurate technique will go far toward effecting a cure. Regarding the after care of these cases, it is very surprising how much the stomach will retain after the operation rather than how little one needs to feed the baby. The old notion used to be that a child a few weeks old needed but the fraction of the food which is given to-day. Give the baby tentatively the quantity it would take normally at its age. Use a dilute food at first. In both of my cases the baby was fed from the bottle with a nipple immediately after the operation, two drams at each feeding at intervals of three hours.

In conclusion, only the most careful and discriminating interpretation of the signs present will help us to a diagnosis. The three signs which will help us the most are the peculiar vomiting, the visible peristalsis and the tumor. I believe that it is absolutely essential that we make a positive diagnosis before treatment. It is impossible to treat these children properly until the diagnosis is made. No one has the right to open the abdomen of a new born in order to make a diagnosis. The diagnosis having been made, immediate operation is the logical method of treatment. The mortality of the operative treatment of these cases of pyloric stenosis in infancy will diminish as the general practitioner recognizes their case before they are reduced by starvation to a low vitality.

Dr. Scudder showed lantern slides illustrating the pathology of the affection and certain of the clinical signs. He also showed tables of all reported cases of stenosis of the pylorus to date.

## DISCUSSION.

Dr. C. W. Strobell, Rutland, Vt.:

I have listened with a great deal of interest to Dr. Scudder's paper. It brings up a comparatively new field of work. There are cases that are congenital, and usually consist of a hypertrophied condition of the tissue. It is very curious how such a condition could occur in children of ten or twelve days old. Of course I have had no experience in gastro-enteritis in infants. The operation could be abbreviated a good deal by the use of the McGrath ligature operation. That does away with the direct incision into the stomach wall and intestine and consequently lessens sepsis and shock. Dr. Scudder did not say how long it took him to perform the operation. In the adult it takes from three-fourths to one hour and a half. I presume he could cut down that time a good deal. The anterior operation is much more rapidly done. Take an infant and the minutes are valuable. I should be inclined to do the anterior operation, because it can be done much more rapidly. The ligature operation is quite simple. It is very elastic and it is almost impossible to break such a ligature. The needle is passed into the intestine at one end of the guarding line of sutures and then into the stomach and then out of the stomach, crowded together and a silk thread passed under the knot, the silk ligature is tied and another knot is taken in the silk. This holds the tissue in a very firm grasp and it cuts its way out in two or three days. What about this vomiting which is killing the child? The vomiting ceases when you cease putting anything into the stomach. Fed by the rectum, the child retains the nourishment. I did this upon a man three months ago who was supposed to be suffering from cancer of the pylorus. That was not my diagnosis, however. I failed to find sufficient evidence of cancer. He would hold food for from thirty-six to forty-one hours and then throw it up. He had lost from forty to sixty pounds in weight. I used the McGrath operation. He made a fine recovery and gained fifty pounds in weight in about ten weeks. Was able to keep his food down and was not troubled with vomiting after that. He is at present working in a foundry. It may be interesting to state how I found this man's stomach. It was quite soft and the walls were greatly hypertrophied. The stomach was greatly enlarged and the walls were adherent to the adjacent viscera and to the meso-colon.

Dr. C. L. Scudder:

Dr. Strobell has spoken of the term which has been applied to these cases as "congenital" stenosis of the pylorus. The use of the term congenital, seems to me to be improper. A better term is "stenosis of the pylorus in infancy." My second case was fourteen days old. The symptoms were vomiting, tumor and visible peristalsis. The vomiting began on the second day and after the mother's milk appeared, the vomiting became more apparent. With regard to McGrath ligature, I believe that each individual operator should use the method which he learns to do the best, and my reason for not using the McGrath ligature is that I do not think it is quite as clean as the method I use. The needle and rubber are drawn over dirty intestines and there is danger of contamination. With regard to the length of time required for this operation—exactly seventeen minutes were used in doing it, and I am sure I could not have done the operation by any other method in less time. Dr. Strobell seems to think that the anterior original operation might be preferable in babies. It has been done a few times anteriorly. The mesentery of the baby's intestine is very short in proportion to the width of the gut

and in trying to bring the gut around the transverse colon, it is sometimes found quite difficult, and nature seems to suggest the posterior route as the best. If the gut can be brought up quickly and the mesentery is not short, then the anterior method might be employed. An important bit of technique is the avoidance of handling the gut. I avoid raising the gut out of the peritoneal cavity. In opening the abdomen I make a large incision and so save manipulation. I do not manipulate the bowel. The success of these two cases was largely due to the avoidance of shock from any undue manipulation of the intestines. The only other word that I want to say is that these cases form a group which at present is small. There probably are not a great many cases in any community, but there are more than have heretofore been recognized, and it seems to me that by carefully watching suspected cases and weighing the evidence for and against the condition, we shall discover a few and save a few more lives.

## BRONCHITIS AND BRONCHO-PNEUMONIA IN CHILDREN.

*By William A. Wood, M. D., Gallatin, Mo.*

Among the diseases of children at this season of the year none is more common or fatal than bronchitis and pneumonia. If anything we can say on this subject shall lead to a more careful study of these grave diseases in young children, our labor will not be in vain.

In dealing with this class of patients very many difficulties confront the physician. The infant can give him no information, and the child who is old enough to answer his questions intelligently very often refuses to come to his aid, hence subjective symptoms are not available in reaching a diagnosis. The thermometer is not reliable for the reason that in children the temperature fluctuates. It rises suddenly and falls just as suddenly without any ascertainable cause. The pulse is also unsafe as a guide in disease, because the physician has no means of knowing what it is in normal health. Under the influence of nervous excitement, anger or fright, both the temperature and pulse are changeable and uncertain. When we add to these incidental influences the disturbing factors of the disease, we begin to realize the embarrassments of the medical adviser.

The physician who is a close observer is, however, not without resources. He can get very much of the information he needs from the mother or nurse of the child and a patient study of the objective symptoms. There is a



revelation in the cry of the child. The cry of pain is different from the cry of anger, or of hunger, or of exhaustion. He must note the difference. In pneumonia the cry is suppressed in consequence of its interference with respiration. The peculiarity of a cough must be studied. In ordinary bronchitis it does not cause pain. In pneumonia it is accompanied by more or less pain, which is plainly depicted on the face of the child.

Physiognomy also teaches its lesson. Conditions of the countenance reveal the nature of the disease. In sleep the face of a healthy child is passive and calm. In pneumonia there is always a movement of the nostrils, indicative of difficult respiration. A chewing motion of the mouth denotes gastro-intestinal disturbance. It is said that the upper third of the face is changed in brain affections, the middle third in diseases of the chest, and the lower third in abdominal lesions. Contractions of the brow show pain in the head and drawing of the upper lip, pain the abdomen. A waxy color of the face indicates kidney disease, and a flush on the cheeks, inflammation of the lungs or pleura. As a broncho-pneumonia is usually secondary to bronchitis, it is not an easy matter to determine exactly when it begins, for its symptoms are often very obscure, and for this reason it is very important to study all the objective symptoms which may aid in reaching a correct diagnosis.

Bronchitis is a very common disease of infancy and childhood. It is variable in extent and intensity. It begins with a cough, hoarseness, difficulty of respiration and febrile excitement. There may be also soreness of the throat, coryza sneezing and a watery condition of the eyes. It may be ushered in with a chill or a chilliness, with languor, exhaustion and drowsiness, followed later by more or less fever. The pulse becomes frequent, with a rise in the temperature. The cough may be slight at first, but increases in proportion to the extent and intensity of the inflammation. When it is frequent and severe it will be accompanied by more or less pain or soreness at the base of the sternum, but the face does not express the same degree of suffering as in the cough of pneumonia. The respiration in mild cases is but little accelerated, but in severe cases it is short, difficult and oppressed, and is attended by a wheezing or a rattling sound, heard first in the throat, but subsequently over the whole of the chest.

The physical signs of acute bronchitis in very young subjects are a combination of mucous and sibilant rhonchi. In the older children these sounds are more marked, especially the mucous rhonchi. When the inflammation extends to the more minute ramifications of the bronchi the general symptoms are correspondingly aggravated. We have now the capillary bronchitis of the older writers, which is exceedingly dangerous, generally terminating in death, sometimes in a few hours.

Every case of bronchial catarrh should be regarded as the beginning of a pneumonia. In the commencement of an attack of bronchitis a small dose of calomel and Dover's powder, followed with castor oil or salines, will be of service. Quinine now in small doses should be given at short intervals for about two days. Alternated with this, the following may be given:

℞ Vin. ipecac ..... 5 i  
Syr. scillae ..... 5 ss  
Syr. senegae ..... 5 ss  
Tinct. hyoscyami ..... 5 i  
Cord. ol. morrhuae ..... 5 ii  
M. Sig: Take from one-half to one teaspoonful, according to age.

The child should be kept warm with flannel next the skin, should remain in bed with the room at a uniform temperature of not less than 65° F. and should be given mucilaginous drinks or barley water with such nourishment as will best meet the want of the system. Fomentations or hot cloths applied to the chest will often be of service. If there is much prostration the following prescription may be given:

℞ Spts. ammon. arom. .... 5 i  
Syr. senegae ..... 5 i  
Tinct. scillae ..... 5 ss  
Syr. prun. virg. .... 5 ii  
M. Sig: Take from one-half to a teaspoonful every two hours.

In children of eight years and upward, the muriate of ammonia in small doses may be substituted for the aromatic spirits of ammonia. In case the inflammation has extended to the lung substance and broncho pneumonia is developed, the chest should be enveloped in a jacket poultice of linseed meal covered with oiled silk, and if there is high fever give as follows:

℞ Potassii citratis ..... 3 i  
Spts. ammonia arom. .... gtt. xv  
Liq. ammon. acet. .... 3 iii  
Glycerine ..... 3 ss  
M. Sig: Give one-half teaspoonful every two hours.

If the cough is distressing give the following:



R Vini antimon. .... 5 ss  
 Spts. ether nit. .... 5 ii  
 Tinct. opii-camph. .... 5 ii  
 Cord. ol. morrhuae .... 5 iss  
 M. Sig: Give one-half teaspoonful every two hours.

Of course symptoms as they arise must be met. It may be necessary to resort to aconite or digitalis or alcoholic stimulants, but the above is a general outline of the treatment in these cases.

## THE CARE OF PREMATURE INFANTS.\*

*By Luman C. Holcombe, M. D., Milton, Vt.*

The life of the infant born prior to the usual 280 days, which represent the normal duration of intra-uterine gestation, is so difficult to preserve, that, from the moment of its birth, we must in every possible manner endeavor to protect it from adverse influences. If it is living when it is born, the very best means obtainable should be at once employed to preserve its existence.

Inasmuch as most premature births are unexpected, and, therefore, the best means of caring for the child are not at hand, they must be treated as emergency cases. It is necessary to have decided views of how this may best be done. Treated in the ordinary manner, so feeble is their vitality, comparatively few would survive. Experience has proven that best results are obtained by restoring them to a condition of warmth, silence, and darkness—making use of every device which our ingenuity can suggest, to provide a substitute, as far as possible, for intra-uterine conditions. Though there are no characteristic appearances or development upon which we can definitely determine the age of the infant when born (as the weight, the length, and the development, all vary for a given length of gestation), the weight, more than any other symptom, indicates the necessity for special care.

The general characteristics of a premature child are, that the body appears relaxed; the skin delicate, through which the veins may often be seen; the head is excessively developed in comparison with the undeveloped condition of the rest of the body; the abdomen is distended, owing to the large size of the liver

and to the accumulation of gas in the intestines, the peristaltic movements of which are very weak. This feeble peristalsis also tends to produce constipation, the respirations are very irregular, shallow, and often imperceptible for a time. The gastric capacity is small though the walls of the stomach are thin and it is easily dilated by overfeeding. Ferments are lacking in the digestive juices, therefore digestion and absorption is slow and imperfect. Sugar is more easily absorbed than any other nutritive material and is needed to maintain animal heat. Sugar solutions should at first be given in low percentages, and even breast milk, if used, should be given well diluted for some time after birth, to the more premature children.

As the blood soon becomes impoverished from insufficient nutrition the child becomes anaemic, and often edematous and waxy-white in appearance. The action of the heart is weak and as oxygenation is imperfect, increased work is demanded of it to maintain the circulation; consequently the child should be kept as quiet as possible to avoid taxing the heart unnecessarily. The animal heat of the premature infant (owing to its lack of sub-cutaneous fat which supplies a source of combustion and insulation for the infant at term, and to its greater radiation) is much more easily reduced. The tissues of the lungs and respiratory tract, owing to their undeveloped state, are easily irritated and inflamed. In many cases only the anterior lobules of the lungs are aerated. Cyanotic attacks are frequent and often fatal. The kidneys, also from lack of development, often fail in their functions. Uric acid stain appearing on the napkins is not necessarily an abnormal condition, but, if excessive, indicates that the infant's food is not properly adjusted to it. The liver is large, filling over one-half the space in the abdominal cavity.

In the treatment of these cases of premature children, we must maintain animal heat; administer the proper amount and kind of nourishment; prevent exhaustion, and avoid infection. In caring for the majority of these cases, whenever possible, the best incubator or brooder should be obtained; and a day nurse and a night nurse should be in constant attendance. The best brooders are expensive, but may be rented at reasonable rates; and it is better to spare no expense in obtaining the very best means for preserving the lives of these very delicate children. By use of the

\*Read before the Burlington and Chittenden County Clinical Society.

incubator, in charge of trained nurses, we insure a constant temperature, and free ventilation of filtered air. The temperature of the air in the incubator should be adapted to the infant, it being that which will keep the baby's temperature normal without exciting perspiration. The usual temperature is about 85° to 90° F., though it may be necessary to maintain a higher temperature for a short period of time. As the infant grows older, if thriving, the temperature is gradually reduced to 95° F., though it may be necessary to maintain infection, therefore the incubator should be regularly disinfected. The clothing used, is preferably a small light shirt, and a napkin from the waist down pinned over the feet and legs. The baby should be removed from the incubator only when necessary for cleanliness, or to be weighed, or nursed, at which times the temperature of the room should not be below 80° F. It should be very carefully handled and protected from light and noise. The infant should be left in the incubator until it has reached the development of full term; or longer than this if it is not thriving. Not less important than the use of the incubator is the proper feeding of the premature infant. Holt says that forced feeding by means of gavage is often indispensable in order to save these very young and very delicate children. Rotch states that the best food for premature infants is that which is carefully prepared at milk laboratories. For an infant premature at from the twenty-eighth to the thirty-sixth week, he would begin with fat, 1 per cent.; sugar, 3 per cent.; proteids, .5 per cent. In the experience of others mother's milk has proved the ideal food, when possible to obtain it, but for the first few days a wet nurse of a longer period of lactation is to be preferred. Breast milk may be given diluted with a 3 to 6 per cent. sugar solution in distilled water. The amount given to a child premature at thirty weeks, would be about one dram every hour, gradually increasing, until at the end of a week, the infant will be taking one-half to one ounce every hour. Brandy may be given with the food when indicated. Oxygen should be administered if attacks of cyanosis are frequent or severe.

As an illustration of the treatment we are sometimes, through adverse circumstances, compelled to give a premature infant, I wish to report the following case: Mrs. T., aged 28, first came under my observation August

20, 1903, at which time she consulted me for nausea and vomiting. These symptoms began suddenly August 15, and, being unable to account for them in any other way, she suspected pregnancy was the cause.

At this time no other symptom of pregnancy was present. Menstruation had the birth of her youngest child. The last day of the last menstrual period was July 28, '03. She gave a history of having borne seven children at term and having had one abortion at four and one-half months. The children borne at term were all above average size, weighing at birth ten and one-half to twelve pounds, and all but one were instrumental deliveries. Of this number but two were living, the others having died in infancy.



DR. HOLCOMBE'S CASE.

Infant premature at 180 days. Birth weight, 24 ounces. Present age, two years; weight, 20½ pounds.

The patient was unable at any time to recognize quickening, and, as I did not examine her, no fetal movements were noted until January 7, 1904, when I was called to attend her. Upon examination I found evidence to corroborate the statement of the patient that quarts of water had escaped from the uterus. Uterine contractions were fairly strong and



regular, but, as the os was slightly dilated, and the life of the infant must surely be lost if it were born at that early period, efforts were made to prevent the threatened abortion. By the use of sedatives hypodermatically, and in rectal suppositories, together with absolute rest in bed, this was prevented until January 24, 1904, when a female infant, having a decidedly senile, emaciated and shriveled appearance, was born. Respiration was established with difficulty, by artificial aid. The infant had no nails on its fingers or toes, the skin was thin and dull brownish-red, its eyelids were separated, though the infant seemed unable to open or close them. It was covered with lanugo. The fronto-occipital circumference of the head was eight and three-quarter inches, the chest measured eight and a half inches in circumference. It was thirteen inches in length, and weighed twenty-four ounces.

The infant was wrapped in absorbent cotton, placed in a box and surrounded by bottles filled with warm water, then placed in a small well ventilated room, the temperature of which was raised to 90° F. As an expensive incubator, or brooder, could not be obtained for it, a simple one constructed on the plan of the Auvaré was hastily prepared by the child's father, who was not a carpenter, but who succeeded very well in his attempt to make a box the interior of which was divided into two equal compartments by a horizontal shelf, reaching from one end nearly to the other, and leaving a space at one end for the passage of the warmed air. The shelf served as the infant's bed; the lower compartment as a hot air chamber into which were openings through which fresh air entered. The upper compartment was occupied by the infant and covered by a moveable glass lid. The outlet for the vitiated air was at the top, above the infant's feet. In this outlet a crude anemometer was used. A thermometer lying beside the infant showed the temperature of the air that it was breathing. Animal heat was maintained by placing bottles filled with hot water into the lower compartment. It was found necessary to change these bottles every two hours to maintain a uniform temperature and that best adapted to this infant. When the temperature was allowed to fall to 95° F. the child shivered, and seemed uncomfortable, and when the temperature was raised, slept quietly again. It was therefore very carefully watched by its parents, having no other nurse, and the temperature maintained with little variation at 98°

F. The position maintained in the incubator was that of the fetus in utero, with arms crossed and feet drawn up. Its general appearance was one of torpor. It could not suck and was fed every hour one-half dram of diluted breast milk. One drop of brandy was given every hour or two hours, as indicated. Deglutition was slow and difficult—the effort being followed by exhaustion. It had numerous attacks of cyanosis, in some of which it was thought by its parents to be dead. It was constipated and movements were obtained by the use of glycerine suppositories. Following the meconium, fecal movements were usually yellow and well digested, though at times green and accompanied by mucus. There was little regurgitation and no vomiting. Its voice was extremely feeble and it was not heard to cry aloud until it was ten weeks old, probably owing to irritation of the respiratory passages. Its pulse, temperature and respiration were very irregular, usually above that of an infant at term, though the temperature was at times below normal.

The uric acid stain was more pronounced than is usual at term, the mother mistaking it for blood. Erythema neonatorum and icterus neonatorum occurred as they usually do in the infant at term, except that the icterus was more pronounced and prolonged. No noise was allowed in the room in which the infant was kept and the room itself was kept in the best sanitary condition possible with its surroundings. The infant was most carefully handled, disturbed as little as practicable and never carried about. It was protected from light, though sunlight was allowed to enter the room freely.

Between the fifth and tenth weeks of life it had five abscesses in the cellular tissue, the largest of which was, when filled with pus, three-quarters by one inch in size. When fifty-six days old the infant was first fed from a bottle, using a nipple with a large orifice and allowing the milk to drop into its mouth. Up to this time it had been fed from a dropper or a spoon. On the nintieth day of life it began nursing its mother. At this time it measured fifteen inches in length and weighed two and one-quarter pounds. On the ninety-eighth day perspiration was first noted. During the fourth month of life it thrived, and the emaciated appearance which, up to this time had been very marked, began to disappear. At six months of age it was plump, had a healthy color, and weighed five pounds.

That this infant was born on the 180th day

of intra-uterine life, seems to be verified by the date of the last menstrual period, the apparent condition and also the calculation of the mother, the absence of recognized fetal movements and the general appearance and weight of the child. There is nothing else especially interesting to record in its history, except that at seventeen months old, finding its two sisters ill of diphtheria, to which it had also been exposed, I administered antitoxin as a preventative. The child is now, at two years old, the size and weight of a normal child one year old. It is intelligent, walks by holding its mother's hand, measures twenty-nine inches in height, and weighs twenty and a half pounds.

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### PHARMACEUTICAL PROGRESS.\*

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The advantages of skilful pharmacy seem to be overlooked in the present outcry against proprietary mixtures sold under trade names. In an address at the Boston Library meeting Dr. Frank Billings, of Chicago, stated that nearly half of the prescriptions written in Chicago and Boston call for trade mixtures not found in the Pharmacopeia; in New York it is 70%. These articles evidently fill a need and it is time to inquire whether the majority of the medical profession is wrong or whether the Pharmacopeia is defective. It must be remembered that for fifty years the official Pharmacopeia occupied a secondary place—indeed, it was a flat failure so far as filling the needs of the practical doctor. The commentary upon it, the Dispensatory of Wood and Bache, first published in 1833, and intended as a therapeutic work to popularize it, practically displaced it. About thirty years ago began the modern movement to keep the official Pharmacopeia up to date by eliminating things which the profession had ceased to use and introducing things it had found to be valuable. Of necessity, then, it is a record of progress—always behind the times and never in advance of them. The profession is constantly on the alert for remedies of greater value than the ones found disappointing—it must use everything which laboratory or other experimentation proves to be useful.

There is a constant evolution in drugs, untold thousands of which are taken up, laid aside as a rule, and the few useful ones sur-

vive to be incorporated in the official list in time as orthodox. Progress means heterodoxy or the use of things not orthodox. He who uses only those things known to be orthodox is therefore just that far behind the times and he is likely to fail, because he does not use things found to be valuable but not as yet stamped as official. The first few patented synthetic compounds of value, beginning with antipyrin, practically revolutionized professional ethics in 1884, for they compelled the up-to-date physician to use, what was formerly condemned on principle. A few bold teachers set the pace and defiantly announced that they would use what was known to be beneficial to their patients, whether it was patented or not, in or out of the Pharmacopeia, if they knew what it was and where to get it unadulterated. There was much ill-feeling, and there was an uncertain dread among the conservative that we were undermining our foundations, but it turned out that we were only repairing them stone by stone. In advocating the use of patented mixtures, whose secret composition can be obtained for a small fee, Dr. Billings is taking a step which would have been severely condemned twenty-five years ago, but the quiet acquiescence of the profession in this matter shows that it has progressed far beyond the position it took upon the appearance of the synthetic compounds. It now demands prepared mixtures and the majority use them. It needs no prophecy to state that such things as are approved by Dr. Billings must become orthodox by incorporation in the Pharmacopeia or it will fail to record progress and tell what is being used by the profession. It will sink to the position it held in the first half century of its life.

Condemnation of unpatented proprietary mixtures does not seem logical. Of course no physician of sense will prescribe secret things whose composition he does not know, but once knowing them he cannot be expected to remember the exact proportions. Not one physician in a hundred can tell the exact composition of paregoric—he does not need to if he knows its exact effects as a mixture. It was once a proprietary mixture—practically speaking if not literally so—and became orthodox because it was used by the majority of the profession, and they used it because it proved to be a good mixture. Other useful mixtures are now going through the same process as paregoric, and we are quite sure that Dr. Billings

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in condemning them is not voicing the opinion of the progressive element of the profession—and that is the great majority; nor are we sure there is so much danger in them as a few writers are inclined to believe. If they are unethical, so are the patented ones; indeed, we seem to be losing our bearing when we approve patented things and disapprove those not patented. We can use them without countenancing the dreadful nostrums, nor indeed need we touch the borderland articles which so often are nostrums masquerading with ethical clothing. We are in another period of a revolution in our attitude toward new drugs, and it is the part of wisdom to heed it if it is to be ethical.

The demand for good pharmacy is at the basis of the present trend of the profession. There are good reasons for the decline of the old-fashioned prescription writing. The schools are not wholly to be blamed for neglect—they merely voice the opinion and usage of the profession. Indeed, they are not always in the advance, for the great pioneers are too often the outsiders, like Koch. Pharmacy is an art and science of itself, as we have previously observed, and a good doctor cannot become a good pharmacist without neglecting more useful things. It is generally recognized that experts can make better mixtures than can be made by the old style extemporaneous prescription which so many still advocate. The old profession trusted the small druggist, the new is trusting the large manufacturer, and one is as trustworthy as the other, no more or no less. The vast majority of the profession are filling their offices with ready made tablets, pills and various mixtures, and are harking back to the days when all doctors dispensed their own drugs. It is an evolution brought about by the growth of modern expert pharmacy. To be sure, they are imposed upon now and then, just as the older physicians were by fraudulent substitutions in the corner drug store. We do not condemn prescription writing for that reason, though we should—to be logical—if we condemn the new methods.

The profession wants the most elegant preparations it can get and will get them. And they are inclined to trust the firms having large interests at stake which would be jeopardized by misstatements or substitutions. They demand advertisements, for in no other way can they learn of new things—the Pharmacopeia does not tell them. If a medical journal is to restrict its columns to merely the old—that is,

if it becomes purely official and orthodox—there's an end to progress. Heterodoxy or progress demands the new and as yet unofficial. Physicians must not be treated paternally, as though they were thoughtless babies. They do a heap of thinking and in the end generally force the leaders to be followers. Schools teach what the profession is doing. They will bitterly resent any accusation that they do not practice rationally, make no diagnoses, merely noting symptoms and treating them—a drug for each one. They demand full information on the new and are not satisfied with secret compositions on the one hand or the orthodox on the other. If officialism is to keep them in darkness as to progress they will have none of it, but will become protestants on principle. The religious nonconformists have just upset the British government by a stupendous but bloodless revolution—medical nonconformists can do the same if need be—and indeed the revolution is now on if 70% are insurgents already.

Ridiculous trade names will correct themselves in time. The manufacturers need a word of kindly advice. It is true that the barbarous chemical names given to new synthetic compounds are so ridiculously impractical that physicians demand shorter ones. It is equally true that the official titles of the Pharmacopeia are impractical for colloquial use. The “nick-names” are universally used, such as paregoric and laudanum. In neither case is there excuse for the bizarre and almost flippant catchwords generally invented for new pharmaceutical mixtures. They have so often been the means of concealing composition and have so misled—innocently, sometimes, no doubt—as to have cast great discredit upon really useful combinations. A word to the wise is sufficient.

Eclecticism has had its basis in an alleged disposition of the regular profession to reject new and useful things because they are unorthodox. There is a widespread opinion among laymen that regular physicians are too hide-bound to keep up with the times. It is a false opinion, of course, but it is played upon by every eclectic who gives the impression that he is the only rational therapist among them all, whereas scientific medicine uses everything known to be useful. If prayer will soothe a poor hypersensitive neurasthenic, he's a brute who will not recommend it in appropriate cases, as advised by an English physician; but prayer

is not in the Pharmacopeia, and it is proprietary to a certain extent in the minds of the ungodly. The present discussion is giving ammunition to every eclectic in the land who will advertise that he is using useful proprietary mixtures of known composition which are condemned as unorthodox by certain regulars. The profession needs to be protected from too much officialism and officiousness—always has had need and always will. It clings to its Aryan rights of free thoughts, free speech, free uncensored press, and freedom to do what's right. Any other course will be fatal to that organization which is such a crying necessity to represent every unit in the profession instead of a disintegrating autocracy.

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FREE LECTURES AT SKIN AND CANCER HOSPITAL.—The Governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will give four special lectures on "The Principles and Application of Local Treatment of Diseases of the Skin," on Wednesday afternoons, March 21 and 28 and April 4 and 11, and that Dr. William Seaman Bainbridge will give a clinical lecture on "Malignant and Non-malignant Growths" on Wednesday, April 18, in the out-patient hall of the hospital, at 4 o'clock. The lectures will be free to the medical profession.

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INTERNATIONAL MEDICAL CONGRESS.—In response to a call for papers for the International Medical Congress to be held at Lisbon, April 19-25 of this year, the following list has already been received:

Clark Bell, LL. D., president of the Medico-Legal Society, Hon. president of the American International Congress on Tuberculosis, of St. Louis, 1904, editor of the *Medico-Legal Journal*, a. "Preventive Legislation against Tuberculosis," b. "The Progress of Railway Surgery in America"; George Chaffee, M. D., editor of the Department of Railway Surgery of the *International Journal of Surgery*, of Brooklyn, N. Y., "Progress of Railway Surgery in America"; William Lee Howard, M. D., Baltimore, vice-president of the Medico-Legal Society for the State of Maryland, "The Medico-Legal Status of the Sexual Pervert"; Dr. Jennie McCowan, of Davenport, Iowa, vice-president of the Medico-Legal Society for the State of Iowa, and of the American International Con-

gress on Tuberculosis, at St. Louis, of 1904, "Rest and Recreation in its Effect on Mental Health"; Samuel S. Wallian, M. D., of New York city, of the *Medico-Pharmaceutical Journal*, "The Therapeutics of Rhythm"; Dr. W. S. Watson, New York, medical director Mahopac Lodge for Mental and Nervous Diseases, Fellow of the Medico-Legal Society and Visiting Neurologist at the St. Gregory Hospital, New York, "Mental Impressions"; Dr. J. Mount Bleyer, of New York, second vice-president of the Medico-Legal Society, "How Social Offenders Should be Treated from a Scientific Point of View"; Dr. Robert Reyburn, of Washington, D. C., vice-president of the Medico-Legal Society for the District of Columbia, "Cancer and Cure of Cancer and Some of the Causes of Failure in Treating Malignant Growth by X-Rays and Electric Currents"; Dr. Frederick Clift, assistant superintendent of State Hospital for Insane, Provo, Utah, title to be sent later; Major Robert Wilson Shufeldt, M. D., of New York, "The Medico-Legal Importance of the Carunculae Myrtiliformes"; A. P. Grinnell, M. D., of New York, "Medical Expert Testimony."

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OPEN-AIR TREATMENT OF PNEUMONIA.—The physicians at the Fordham Hospital are advocating the "out-door treatment" for pneumonia. Early last fall Dr. Dunn, of that institution, fitted up an old tent, a relic of the typhoid epidemic of last year, and in it placed the pneumonia cases which came under his observation. The effect of the treatment was phenomenal, only one patient afflicted with pneumonia dying out of some thirty persons treated. Of several cases in which there were complications, mostly alcoholism, the results, while not so good, were better than would have been possible indoors.

The experiment has been pronounced a great success, and it is thought will now be followed in Bellevue, where the physicians have been much interested in the trial at Fordham, their allied hospital. Professor Northup's experiments along the same lines have been attended with marked success at Mt. Sinai Hospital.

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After removal of the appendix symptoms of appendicitis sometimes persist, leading the patient to believe that the organ had not been extirpated. These are generally due to a colitis, which must be treated by high irrigations, diet, etc.—*International Journal of Surgery*.



## Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the Medical Sciences.*

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 B. H. STONE, M. D., }  
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### EDITORIAL.

There is at present the most widespread interest in the so-called nostrum evil. This subject naturally appealing to the medical profession, is of most vital importance to the medical press. It seems to the editors of this journal that it is no more than fair to our constituency to come out plainly and flatly with a statement of just what grounds we take on this subject. We must preface such a statement with the confession that we have been and are even yet in something of a haze regarding the terms "nostrum," "proprietary" and "patent medicines." An attempt has been made in *The Journal of the American Medical Association* to elucidate the meaning of these terms by the following explanation: "Proprietary medicines are those which someone owns; those that are the property of someone. Their ownership or proprietorship is held in two ways: (1) by a patent, (2) by a trade or copyright name.

\*\*\*\* The word 'nostrum' means a medicine the ingredients of which are kept secret for the purpose of restricting the profit of sale to the inventor or proprietor." From these definitions it is seen that a patent medicine cannot be a nostrum, for the requirements of the patent right demand a full description of the article to be filed with the government and this description can be obtained by anyone for five cents, by writing to the patent office and making request. Proprietary preparations may or may not be nostrums.

There seems to be a few principles which should guide us in deciding between the ethical and the non-ethical preparations: (1) honesty, (2) non-secrecy. To give some accurate basis for decision on these points the Council of Pharmacy and Chemistry was formed in the American Medical Association. This committee has done some good work in clearing up the composition of certain preparations and exposing the extravagant claims of others. Its work is as yet, however, barely begun. The completed work will be published in a book of "New and Non-Official Remedies." Since the action of the American Medical Association expressing the demand for the knowledge of the composition of the proprietary remedies, many of the manufacturers have given formulas of their preparations, and it rests with the Council to decide whether or not these formulas are honest. Until the work of this Council is complete it is wiser for the average physician to suspend judgment. That many of the proprietary preparations are perfectly legitimate and very efficient there can be no doubt, and that in the composition of many there has been exercised a skill inaccessible to the practitioner and his local druggist, is equally true. To this committee of experts should be left the task of separating the good from the bad. As a temporary result of the crusade great damage has without doubt unjustly been done to many

manufacturers of integrity and many preparations of intrinsic value.

Our obligations to these pharmacists is ably presented in the editorial copied in this issue from the *American Medicine* of Feb. 10. No one can doubt the ethics and honesty of Dr. Gould. Especially should his words have weight when it is known that he retired from the editorship of one of the country's largest medical weeklies because its proprietors wished to take advertising which he considered objectionable. That Dr. Gould's views are practically those of the Council of Pharmacy and Chemistry is evident from the following quoted from the announcement of this board: "All proprietary medicines must not be classed as secret nostrums. While a few reputable manufacturing pharmacists have not been able to resist the temptation to sacrifice their good names by manufacturing and exploiting preparations that are nothing more or less than secret nostrums, and while so many physicians seem to be content to use such preparations there are plenty honestly made and ethically exploited proprietary preparations that are therapeutically valuable and that are worthy of the patronage of the best physicians. In spite of all with which it has had to contend, the science of pharmacy in America is progressing and is still leading the world."

As a result of much agitation on the subject of nostrums confusion has arisen which leads many doctors to condemn, without awaiting the results of investigations, many preparations which we feel assured will pass favorably the censorship of the Council. That this confusion exists in the minds of some of the writers in the lay journals is indicated in the article by Samuel Hopkins Adams in *Collier's*, Feb. 17, where he classes Acetzone with Liquozone for no other reason than that we can see than that the names are similar. The writer believes that the whole problem would solve itself if for-

mulas were stated on the labels and that this result can best be brought about by legal enactment. This once accomplished the various government and state laboratories could exercise censorship over these preparations under the provisions of pure food and drug laws which exists in most states.

Until the time comes when we can have some definite standard, the VERMONT MEDICAL MONTHLY aims to follow as closely as possible in its advertising matter the recommendations of the American Medical Association. It is our policy to make no new contracts to advertise articles which are not strictly up to such standards as we have at the time. We have already refused several lucrative offers because we were suspicious of their nature. Our journal is obliged to carry advertisements, not to insure profits but to make its existence possible. There are only a few journals in the United States which could run a month on the income from subscriptions alone, and let none of our readers think for a moment that the VERMONT MEDICAL MONTHLY is one of these.

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The opinion, taught until a few years ago, that typhoid fever could not occur in children, is probably still held by many practicing physicians, who because of its atypical course and their failure to see the necessity for the Widal or other tests, do not recognize what is now known to be true typhoid, caused by Elberth's bacillus. The adult form of typhoid apparently does not appear until after ten years of age, and while the typhoid of early life is not as common as in adults, it is by no means rare. Either because of actual increase or from better diagnosis, cases recently seem to be more numerous. The features in which the typhoid of children differs from that of adults are mainly these: The fever is commonly of only three weeks' duration, from onset to return to normal. The onset is frequently sudden, often



beginning like an attack of acute indigestion with vomiting and rise of temperature. The nervous symptoms, as a rule, are more prominent than the intestinal, especially in severe cases, depending directly on the height of the fever. These symptoms are also prone to take on the type of stupor or apathy, rather than the more active forms. The Widal reaction is obtained relatively early in the disease. Treatment is practically along the same lines as in the adult form, with particular care in regard to bathings and enemata, as small children sometimes do not stand these well. In Vermont, where typhoid is a pretty constant quantity, there should be excellent opportunity for study of this disease, on whose features more light is still needed.

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## NEWS AND PERSONAL ITEMS.

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*We desire to make this column of personal interest to all.  
Physicians are requested to send news items.*

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### VERMONT.

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Miss J. Florence Perry, for the past three years matron at the Heaton Hospital at Montpelier, has tendered her resignation to take effect as soon as her successor is appointed.

News has been received of the death of Dr. Fred Goodwin, a graduate of the Medical Department in 1889. He practiced in Bayfield, N. B., for a number of years and was prominent in the affairs of the town. He was 44 years of age.

The trustees of the Vermont Sanatorium held a meeting Feb. 20, and decided to have plans drawn at once for the new building which is to be erected at Pittsford, so that the work of construction can begin as soon as the weather is favorable. Officers were elected as follows: President, F. C. Partridge, of Proctor; vice-president, F. G. Butterfield, of Derby Line; treasurer, Miss Emily B. Proctor, of Proctor; secretary, Dr. W. N. Bryant, of Ludlow; executive committee, F. C. Partridge, *ex-officio*; Dr. C. S. Caverly of Rutland, D. D. Burditt

of Pittsford, Olin Merrill of Enosburg Falls, Redfield Proctor, Jr., of Proctor; finance committee, ex-Gov. Page of Hyde Park, George Aitken of Woodstock and the Rev. P. J. Barrett of Burlington.

Dr. Charles Edward Prentiss, for ten years assistant librarian of Middlebury College, died suddenly at his home in Middlebury, March 5. Dr. Prentiss was born in Weathersfield, Sept. 24, 1843. He was graduated from Middlebury with the class of 1864. Following graduation he was in the employ of the government at Washington, D. C., at different periods and in 1871-72 he was in London with the United States loan commission. Subsequently he was a practicing physician in Washington from 1878 to 1882, and then in Bridport from 1882 to 1884. He was then engaged in business in New York for three years, returning to Middlebury, where he continued in business until he became connected with the college library in 1896.

The State Board of Health has issued its quarterly Bulletin this month, a particularly interesting number. The principal articles are: "Notes on Cerebro-Spinal Meningitis," by Daniel Lewis, M. D., late Commissioner of Health of the State of New York; "Disinfectants," by F. C. Robinson, consulting chemist, Maine State Board of Health; "Discussion on Disinfectants," by Mr. Edgar B. Moore of Rutland; "Health Officers, Their Duties and Responsibilities," by Henry D. Holton, A. M., M. D., Secretary Vermont State Board of Health; and a report of the question box conducted by Mr. M. C. Webber of Rutland at the last health officers' meeting. There is also printed the law relating to the care of pupils in the public schools and directions for the collection and transmission to the State Laboratory of Hygiene of materials for medico-legal examination.

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### NEW HAMPSHIRE.

The marriage of Dr. Stephen Young of Dover and Miss Blanche H. Adams occurred Feb. 23.

Dr. A. J. Nute has tendered his resignation as city physician of Portsmouth. He has recently been appointed a surgeon in the United States revenue service, and has been ordered to report at Port Huron as soon as possible.

Dr. J. M. Rix, a retired physician, died at his home in Warner, Feb. 16. Dr. Rix was born in Littleton and was 72 years of age. He practiced medicine until about eight years ago, when he sold out his practice to Dr. J. F. Merrill of New London. He was a Civil War veteran and had been a member of the school board and held other town offices.

Dr. David O. Smith of Hudson, one of the best known physicians in southern New Hampshire, died at his home Feb. 15, following a short illness, aged 82 years. Dr. Smith ranked high as a musician as well as a physician, and for years figured prominently as a teacher of music in Hudson and in other towns. He was a graduate of the Harvard Medical School.

The mid-winter meeting of the Cheshire Medical Society was held Tuesday, Feb. 13, at the Cheshire House, in Keene, N. H., with a good attendance of the physicians from all parts of the county. After the business session Dr. H. K. Faulkner, of Keene, presented an interesting paper on "Swiss Surgery," based largely upon his observations during his trip abroad.

Dr. David P. Goodhue recently celebrated the 40th anniversary of his practice in Springfield. He was born in Dunbarton in 1838 and when 21 years of age began the study of medicine with Dr. E. H. Webster of Boscawen. He attended medical lectures at the University of Vermont and at Dartmouth, obtaining his degree from the latter college. Later he served for some time in the navy before beginning private practice.

The annual banquet of the Manchester Medical Association was held Feb. 20, with a large delegation of members present, Prof. Charles M. Green of Harvard Medical School and Dr. Chauncey Adams of Concord being the guests of the evening. Dr. A. Gale Straw served as toastmaster. Dr. Adams spoke on "Placenta Praevia" and Prof. Green on "Cesarian Section and its Indication in the Treatment of Placenta Praevia."

The trustees of the \$70,000 Wentworth Hospital, now in process of construction, have elected Miss Grace P. Haskell of Portland, Me., superintendent of the institution. Miss Haskell was born in Augusta, Me., and is at present superintendent of the St. Barnabas Hospital at Woodfords, a suburb of Portland,

which position she has held since the opening of the institution a year ago. Miss Haskell was one of three candidates for the position, the duties of which she will enter upon next June.

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#### CONNECTICUT.

Dr. John Slade Ely died Feb. 7 at New Haven, as a result of a fracture of the skull received by a fall from his horse. He did not regain consciousness, and although a trephine operation was done, it was without success. Dr. Ely was professor of theory and practice of medicine in Yale Medical School, and was graduated from the College of Physicians and Surgeons of New York in 1886. He was 46 years of age.

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#### MASSACHUSETTS.

Dr. Samuel D. Brooks, one of the oldest physicians in the State, died at his home in Springfield, Feb. 26, from angina pectoris, being within a few days of his 90th birthday. He retired from the active practice of medicine 15 years ago, but during his active life was one of the pioneers in the institutional care of children, being for several years the head of a large juvenile asylum in New York city and at different times connected with other institutions. He returned to general practice in 1873, locating in Springfield. Of late years he has resided with his son, Dr. L. S. Brooks.

The city of Waltham has appropriated \$600 for the medical inspection in the public schools. The board of health of the city will have charge of the work.

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#### NEW YORK.

Dr. David Fawdry, one of the oldest practicing physicians in Watertown, died suddenly of apoplexy Feb. 20. He was visiting a patient and when about to leave the house a fastening of his artificial leg became loosened and he retired to an adjoining room to adjust it. A few moments later a crash was heard and he was found lying dead upon the floor. Dr. Fawdry served as surgeon in the navy throughout the Civil War.



## AN EPITOME OF CURRENT MEDICAL LITERATURE.

### MEDICINE.

#### TYPHOID FEVER IN CHILDREN.

LOUIS C. ALGER (*Archives of Pediatrics*, Jan. '06) gives the case histories of five cases of typhoid fever in children which were under his care at one time. These cases he considers interesting as showing the great variation in symptoms among children in cases from a common source. He considers the Widal and Diazzo reactions of great value in the diagnosis of these cases. Especially does he consider this true in the differential diagnosis of simple enteritis and typhoid in bottle-fed babies. The diagnosis once made, the treatment should be largely symptomatic. He thinks that enteroclysis should be used with great caution, and that never unless specially indicated, on account of the danger of over dilating the blood vessels and paralyzing the muscular coat of the intestines. He does not believe in an unmixed milk diet, preferring one of proprietary food, meat broths and grain gruels. When milk is given it should always be peptonized. The chief danger is in overloading the digestive tract and producing tympanites and intestinal irritation. In cases where an evacuant is indicated he uses a mixture of castor oil, mucilage, acacia, camphorated tincture of opium and essence of peppermint. For a heart stimulant he uses alcohol, digitalis, aromatic spirits ammonia, with camphor for hypodermic use. In dangerous collapse, tincture of capsicum diluted in oil or water and given in 5 to 15 minim doses, per rectum, he considers the remedy par excellence. Intestinal antiseptics is of value in preventing the production and absorption of putrefactive toxins. Finally the use of the ice cap on the head and the intermittent use of one on the abdomen he considers very effective in reducing the temperature and quieting the nervous system. This, with an occasional lukewarm sponge, is all the antipyretic treatment needed and should be accompanied with a hot water bag at the feet.

#### TYPHOID PERFORATION.

W. COURTNEY, Brainerd, Minn. (*Journal A. M. A.*, Dec. 2), remarks on the promptness with which the profession meets the surgical needs in appendicitis as contrasted with its apparent neglect of the equally urgent need of operation in typhoid perforation. The difference is one of the anomalies of surgical progress. In the fifteen years from 1898 to 1905 there were treated in the Northern Pacific Railway Hospital at Brainerd, Minn., 576 cases of typhoid fever, with 42 deaths, or 7.3 per cent. Ten deaths, or 28.8 per cent. of the total mortality, were from perforation. All the patients not operated on died, as well as four of the five subjected to operation, making a recovery of 20 per cent. The pathology and symptoms of intestinal ulceration and perforation in typhoid are reviewed and the symptoms described. He says: "Given a case of typhoid fever with clinical symptoms pathognomonic of the disease, backed up by Widal's sero-diagnosis, if possible, and presenting, after the first week, the three cardinal symptoms, pain, rigidity and tenderness in the cecal region, supplemented by some of the less valuable symptoms, and it will be not only expedient, but reasonable, to diagnose intestinal perforation." As regards the differential diagnosis, Courtney holds that, with the possible exception of intestinal hemorrhage, opera-

tion is equally indicated in all the conditions that are likely to be confounded with typhoid perforation. With improvements in the treatment of peritonitis, the expectation of 50 per cent. of recoveries if the operation is undertaken within the first three hours, ought to be realized. He prefers general anesthesia in these cases and the incision through the right rectus muscle, opposite the cecal region. He would use drainage from the bottom of the pelvis, probably through a stab wound on the left as well as by the operation wound, and put the patient in the Fowler position to favor gravitation of fluids to the pelvis where the drainage has been placed. The sutured portion of the intestine should be fastened by gauze or a few stitches of ten day catgut to the operation wound, as a precaution in cases of giving way or leakage from the suturing. Except where used for drainage the operation wound may be closed by through and through sutures. Detailed reports of the eleven cases of perforation are given. The author remarks in connection with the site of the site of the perforation that he has seen inconspicuous two cases of esophageal stricture developing before convalescence in typhoid, in neither of which could it be attributed to any traumatism occurring in the course of the disease.

#### TREATMENT OF LOBAR PNEUMONIA.

BURDETTE O'CONNOR (*Northwest Medicine*, Feb. '06) contributes an article on the treatment of acute lobar pneumonia, in which he takes vigorous exception to a sentiment expressed by Arthur D. Bevan in an address before the Chicago Medical Society, that "Drug treatment is useless in cases of pneumonia." He asserts that many cases of pneumonia which would otherwise have died have been saved by the timely and judicious administration of drugs. One factor stands pre-eminent in any successful treatment and that is individualization of each case. The habits and temperament must be taken into consideration. He classifies the treatment under three heads: (1) Sanitary, (2) Dietetic, (3) Medicinal. Under the first head he mentions a clean room with a temperature of 68° to 70°, good ventilation and quiet as essentials. A fairly firm hard bed and good nurses are needed. As to the dietary he advises milk and eggs in liberal quantities, the former undiluted and cold with a little lime water, and the latter beaten up with sugar, water and lemon juice or in milk. These should be given every two hours, watching carefully for signs of digestive disturbance. The great danger will be in overfeeding in convalescence. Under medicinal treatment he includes the mechanical aid in changing the patient from side to side every few hours to prevent stasis. His external treatment consists of a cotton jacket. Internally he uses whiskey, which he considers the sheet anchor, strychnine and spartine for cardiac stimulation, and in the treatment of the lungs themselves he uses carbonate of creosote in the following combination:

R Creosote carbonate .....	3 iiii
Syrup acacia .....	qs.
Glycerine .....	3 i
Aq. Menth. ....	qs. ad. 3 iv

M. Sig. A tablespoonful every two and one-half to three hours.

The creosote and syrup of acacia, of which an ounce is usually needed, are first thoroughly mixed and slightly warmed in winter, then the glycerine added and the whole thoroughly shaken until a homogenous emulsion is formed and the creosote thoroughly broken up, then the peppermint is added. This he claims prevents intestinal fermentation and consequential upward pressure of diaphragm with all

of its ill effects, lessens the viscosity and tenacity of the sputum, shortens the time during which blood is present in the expectorations and aids healing. With this treatment he reports a series of 37 cases of acute lobar pneumonia without a single death.

#### TREATMENT OF SCARLETINA.

A. E. GRANT (*Denver Medical Times*, Feb. '06) sums up his principles of treatment in scarlet fever as elimination, stimulation and vigilance for complications. For elimination he gives broken doses of calomel. If there is diarrhoea it is checked by sodium sulphocarbolate, 5 grs. dissolved in flavored water every two hours. The nasal chambers are washed with a plasma nasal solution two or three times a day and the throat treated with dioxogen and protargol 10% applied twice a day. Lithium benzoate in  $\frac{1}{8}$  gr. doses well diluted, is given every two hours as a diuretic and urinary antiseptic. For toxicemic conditions strychnine arsenate, grs. 1-134, is given every hour or two until improvement is noted and digilutin in 1-67 gr. doses is given when there is a rapid irregular heart. High temperature is treated with tepid and cold spraying. For enlarged glands calcium sulphide is given in  $\frac{1}{8}$  gr. doses every two hours, with ointment composed of:

- Rx Icthyol ..... 3 ii  
 Ung. hydrag.  
 Ung. bellad. aa. .... 5 ii  
 Adepis lanæ hydrosi, qs. ad. .... 3 ii

During desquamation, bichloride baths 1-5000 are given once or twice daily, followed by an ointment of carbolized vaseline or sweet oil and vaseline.

D. R. LUCU (*Denver Medical Times*, Feb. '06) gives the following as his treatment of scarlet fever: Calomel in broken doses up to a grain to unload the intestinal tract and allay vomiting. If the rash is not fully developed a hot mustard bath is valuable to bring out the rash and quiet the nervous symptoms. The throat lesion is treated with equal parts of hydrogen peroxide and water applied every two or three hours, depending upon severity of local symptoms. The posterior nares are kept clean with a solution of boracic acid applied by means of a soft rubber ulcer syringe. About the second day this prescription is used for a child six years old:

- Rx Tr. ferri chlorid ..... 3 ii  
 Pot. chloratis ..... 5 i  
 Glycerine.  
 Aquæ, aa. qs. ad. .... 3 iv

M. S.: Take one teaspoonful every two hours.

Later, Basham's mixture is given continuously through convalescence. Fever is controlled with small doses of antipyrin and the ice bag. The possible otitis is treated with a solution of boracic acid applied with a fountain syringe twice a day. Swollen glands are treated locally with camphorated oil. If stimulation is necessary resort is had to strychnine, caffeine hydrochlorate and whiskey, together with high enema of hot water. Kidney complications, if they arise, are treated with hot pack, small doses of pilocarpine and brisk cathartics. The diet consists of milk and broth with plenty of water.

#### APPENDICITIS AS A CAUSE OF DISORDERS OF DIGESTION.

J. B. EAGLESTON (*Northwest Medicine*, Feb. '06) cites 26 surgeons of much repute in support of his contention that many obscure gastric disturbances in adult life are due to adhesions resulting from more or less acute and often undetected attacks of appendicitis in infancy and early childhood. He believes that the presence of fecal concretions, ulceration of the mucosa or "appendicitis granulosa" may in themselves cause more or less disturbance of the gastrointestinal canal, since the plentiful nerve supply of

the appendix is so intimately connected with the solar plexus and superior mesenteric ganglion. These subcutaneous conditions must also cause adhesions. He maintains in conclusion that subacute and chronic appendicitis is a distinct and positive cause of severe gastric disturbance and that in such cases it is only rational and scientific treatment to remove the offending organ.

#### DIAGNOSIS.

##### TESTING THE DIGESTIVE APPARATUS.

MAX EINHORN (*Medical Record*, Feb. 10) describes a method of testing the functions of the digestive apparatus. His original method, described in the second edition of his work on the Diseases of the Intestines, consisted of having the patient swallow a number of small glass or porcelain beads, which are later looked for in the feces by means of his stool seive, thus giving a good idea of the motor activity of the intestinal tract. He adapts this method for a determination of digestive functions by attaching food stuffs to the beads by means of a silk thread passed through the opening in the bead, these are then passed through the stomach and bowels in order to see what finally remains attached to the bead. To test the work of the stomach only the beads with the food substance attached are tied to a long silk thread and placed in a gelatine capsule, the thread being drawn through the capsule and then swallowed. The thread is passed into the stomach 50 or 60 c. m. from the lips and the food stuffs exposed from four to six hours, then withdrawn and examined. He then describes some of his results with the normal and pathological digestive tract.

##### DETECTION OF ALBUMOSES IN URINE.

WARREN P. ELMER (*Am. Medicine*, Feb. 3, '06) in an article on albumoses in urine, states that for clinical purposes we may safely consider as albumoses all proteids in the urine which dissolve on heating to reappear on cooling in the presence of such reagents as nitric, acetic or sulfosalicylic acids. These proteids represent the earlier stages of disintegration by hydration of albumens. Under normal conditions this change is continued until the end product uric acid and urea is reached. The detection of albumoses in the urine should direct the attention of the clinician to the fact that an abnormal destruction of the tissue is going on in some portions of the body, or if such a condition is suspected, lead him to examine the urine for albumoses that his suspicions may be confirmed. The conditions most likely to give rise to considerable quantities of albumoses are multiple mycetoma of bones, pulmonary tuberculosis, croupous pneumonia during resolution, septicemia and pyemia, abscesses, sloughing sarcomas and carcinomas. The oldest and perhaps simplest test for albumoses consists in adding to a clear cooled urine a few drops of strong nitric acid. If a cloud or precipitate appears which dissolves on heating, to reappear on cooling, albumoses are present. Another test is performed by strongly adulterating a small amount of urine with acetic acid and treating it with an equal volume of saturated solution of common salt. Here as in the other test the albumoses are precipitated but are dissolved on boiling to reappear on cooling.

##### SIMPLE TEST FOR TYPHOID URINE.

Russo's Methylene blue test for typhoid urine, as given by the *Riforma Medica*, Vol. XXI, No. 19, 1905, is very simple and is as follows: Four drops of a 1 to 1,000 aqueous solution of methylene blue are



added to 4 or 5 c.c. of suspected urine. If the reaction is positive the mixture turns to an emerald or mint green hue. A light green or bluish green tint shows a negative reaction. The positive reaction is not affected by boiling the urine or the previous ingestion of such compounds as phenacetin, salol, quinine, calomel, etc. It is present as early as the second day of the disease and persists throughout its course. The mint green hue is first noted and the emerald green hue appears as the disease progresses. If the course is favorable the tone becomes more and more bluish, while if unfavorable, the emerald tint persists.

The chief point of Rosso's test is its simplicity. It is also quite as reliable as the diazo reaction of Ehrlich. It is, however, present in cases of measles, smallpox, chronic and suppurative tuberculosis. It is not present in varioloid, varicella, scarlet fever, miliary tuberculosis, appendicitis and other conditions.

The difficulty in the application of the test comes in the ability to recognize the various tints of green which may be present. With a little practice, however, the positive reaction may be readily detected. The fact that the test is not present in a miliary tuberculosis, appendicitis, varicella, etc., makes it invaluable as an aid in differential diagnosis.

## SURGERY.

### SURGICAL REPAIR OF INJURED NERVES.

J. S. HORSLEY (*Journal A. M. A., March 3*) discusses the pathology of nerve degeneration after injury and the regeneration that takes place, especially after surgical union of divided nerves. He holds that, while early operation is advisable in some cases of crushing injuries or when suppuration has occurred, or where there is compression from a callus or a tumor, no operation for nerve suture should be abandoned because of the length of time that has elapsed since the trauma. Cases have been reported in which many years have elapsed between the injury and its surgical repair. He reports at length an interesting case of nerve implantation for complete traumatic paralysis of motion in the forearm except in those parts supplied by the ulnar nerve, and of sensation except in those parts of the skin supplied by the ulnar and musculo-cutaneous nerves. Two operations were performed, both in the upper arm, with an interval of more than a year between them. In the first operation the median nerve was united to the ulnar, marked improvement following; in the second, the musculo-spiral nerve was united to the median and fairly good restoration of function resulted. Trophic disturbances, ulcers and crumpling of the nails of the middle and index fingers appeared, but disappeared after the second operation. The special features of the case are discussed; the facts indicate an anomalous nerve supply for the extensors of the forearm, either a high bifurcation of the musculo-spiral or a free communication between the anterior interosseous of the median with the posterior interosseous of the musculo-spiral. The trophic disturbances on the fingers are attributed to an anomalous distribution and partial degeneration of the radial nerve. The article is illustrated.

### SURGICAL COMPLICATIONS OF PREGNANCY.

DONOGHUE discusses appendicitis and ovarian and uterine tumors as surgical complications of pregnancy (*Journal A. M. A., Nov. 25*). He apparently favors home treatment in these conditions so far as possible, pointing out the dangers to the practice of the physician from what he calls the "hospital habit" that has been growing of late. His conclusions, in

substance, are as follows: With the history of a well-marked attack of appendicitis in a young woman, operation should be performed as an antecedent to marriage. Well-marked acute symptoms, in pregnancy, referable to the right iliac fossa, call for operation at once. Marked discomfort in the same region, gradually increasing, calls for the same treatment. Operation should be advised before marriage when tumors of the uterus or appendages are known to exist, but if they are not recognized before pregnancy occurs, the treatment should be governed by the conditions existing in the individual case. At or near term an operation can be performed that will remove the condition and also permit the delivery of the child.

### REQUIREMENTS FOR SUCCESS IN SURGERY.

The requirements for a successful surgical career are, according to L. C. BOSHER (*Journal A. M. A., March 3*), first, a thorough natural fitness for the work; second, a thorough liberal education including as much as possible of studies of a scientific nature, especially physics, biology and chemistry in the order named. Next the very best available medical school should be selected where a complete all-around medical education may be obtained. After completion of the medical course a term of hospital service is now considered an absolute essential, and, if choice is possible, it should be in a hospital where the cases are seen under the masters in the profession, and where the interne's time is divided into service in the medical and surgical wards, in the order named, if he wishes to become a surgeon. In such a one he can learn the methods of the masters and learn the responsibilities of a surgical assistant. Mere observation alone, however, will not suffice, but operations on the cadaver and on the lower animals are invaluable in acquiring technical skill without risk of human life. From the simpler operations on the patient, the interne can gradually advance to those more difficult as his skill and judgment improve. The best advantages of hospital training are obtained by the interne who gives his full attention to his duties, and he will thus gain the confidence of his superiors and lead them to entrust work of greater importance into his hands. After finishing the medical course and the hospital internship, and perhaps also a term as surgical assistant, there are still generally months and even years before a special surgical practice can be developed, but this is an advantage rather than a drawback, as it favors the acquirement of the breadth of view which is sometimes notably absent in those who settle down too early into the practice of a specialty. In conclusion, he refers to the other indispensable requirements, health, energy, honesty and temperate habits, as well as the incidental advantages of attractive personality and tact, here as in every other position in life. With these requisites one may count on a reasonable measure of success in the practice of surgery, and even the rare exceptions who are "born surgeons" would also be the better for them.

### BONE TRANSPLANTATION FOR THE RELIEF OF SADDLE-NOSE.

C. F. Welty, San Francisco (*Journal A. M. A., November 11*), discusses the comparative merits of paraffin injections and plastic operations for the relief of nasal deformities, giving the history of a case in which he operated by transplanting a piece of bone from the crest of the tibia. Perfect bony union was not obtained, but the piece remains in place, and it is hoped permanently. He reviews the literature of paraffin prothesis and concludes that

the risk of embolism is such that plastic surgery should be preferred when possible, and that, if paraffin is employed, it should not have a melting point below 115 F., and a screw piston syringe, allowing definite measurement of the amount injected, should be used. He is satisfied that only a small part of the accidents from paraffin have been reported. The production of new tissue by paraffin injections is, he says, almost ideal but there is the uncertainty of possible loss of vision or life or of other complications, while with plastic surgery the surgeon works on better established principles.

#### DIONIN.

Although the general literature on dionin is enormous, W. H. Snyder, Toledo, Ohio (*Journal A. M. A.*, November 18), says that he has been unable to find any reported experiments bearing on its action on tissues and cells, and cites his own, in which the drug was applied directly to the eye of a rabbit in larger quantities than would be required for an abnormal eye. Sections were made of the enucleated eye and the findings noted. He concludes that the action of dionin is purely local, its most marked effects are in eyeballs in which tension is increased, and he believes its entire action can be explained by saying it has some disassociating action on the intercellular cement substance, allowing a transudation of serum from a globe under pressure. Its analgesic effect is explainable by its lessening of tension and by the well known action of the derivatives of opium. He believes that it is only a lymph stimulant secondarily; after the edema the fluid is absorbed as lymph, as it would be in edema from any cause. He reports a case of complete absorption of the iris, lens and capsule under the use of dionin in a case of severe contusion of the eye without penetration. In iritis with adhesions and plus tension, it lessens the tension and permits absorption of the mydriatic with resulting relief of pain and dilation of the pupil. In corneal ulcers, especially of the peripheral type, the repair process begins as soon as the ulcer is cleared. The more recent the inflammation and the higher the tension the better the results from dionin according to Snyder's experience. In recent cases of corneal opacity he has had good results, but little or no benefit in old central opacities with low or normal tension. He has tried it in conjunctival hemorrhage without special success, the pressure element being evidently lacking. In beginning pannus, his experience has been more satisfactory than with any previous treatment, the lid of course being treated for the cause. In glaucoma he prefers dionin to eserine, relief from pain being marked, due, he thinks, to the mechanical relief from pressure. He early abandoned the use of solutions and now applies the powder directly to the cornea with better results. The article is illustrated.

#### PECULIAR SYMPTOMS FOLLOWING A RADICAL OPERATION.

George F. Cott, Buffalo (*Journal A. M. A.*, November 11), reports a case of long standing in which after a mastoid operation the patient complained of almost constant pain, and the temperature varied from 104 to about 99 F. for two weeks. The patient has a regurgitant murmur and there was at times pain in the region of the heart. As the patient was markedly neurotic, the sinus was not explored, though sinus phlebitis was suspected. The patient was able to leave the hospital on the thirty-fourth day after operation. During the following year there was frequently pain in the ear, but not so

severe as to require opiates. The temperature has never been quite normal, though the patient has improved in general health, and the ear is practically well.

### INFANT FEEDING.

#### TOP MILK MIXTURES.

According to J. C. GITTINGS (*Journal A. M. A.*, Dec. 8), good results in infant feeding can be obtained with the use of the top portion of good ordinary milk bottled under fair hygienic conditions. A little personal investigation of one or more dairies will often enable the physician to recommend a useful product at market rates. The excessive variation of the fat content is largely compensated for by the necessary dilution. The proteid is much less likely to be variable, and while the percentage of this and of sugar decreases as that of fat increases for practical purposes allowance need only be made for this when we use 13 or 16 per cent. cream. Certain other matters are just as important as the strength of the milk. The proper interval of feeding should be more strictly adhered to than the amount or strength of the mixture. Save in exceptional cases, such as illness, etc., the following rules may be advocated: During the first two months of life the interval between feedings should be two hours; during the second two months two and one-half hours. After the fourth month the interval should be three hours. The amount given at different ages may be approximately stated as follows: First week, 1 ounce; second and third weeks, 1½ ounces; fourth week, 2 ounces. From the second to the seventh month, inclusive, the amount of mixture in ounces varies from the number of the month to one in advance of it; for example, third month, from 3 to 4 ounces; fifth month, from 5 to 6 ounces, etc. It rarely will be advisable to give more than 8 ounces at one feeding. As regards the strength of the milk mixture it may be assumed that the average healthy infant can digest whole cow's milk at the age of from 8 to 12 months. Some can do it earlier and others will be unable to digest whole milk at any time during the first two years of life. The first three months is the crucial period when mistakes are most frequently made, and during this period the strength of the first milk mixtures should be: fat, 1.5 to 2 per cent.; sugar, from 4 to 5 per cent.; proteid, from 0.5 to 0.75 per cent. By the third or fourth month the fat should have been increased to from 2.5 to 3.5 per cent.; sugar to 6 per cent.; and proteid to from 1.5 to 2.5 per cent. From the eighth to the twelfth month the full strength of whole milk should have been reached. The cardinal points to be noted are the condition of the child's digestion, the gain in weight and the appetite. The importance of frequent (bi-weekly or weekly weighing is emphasized; a healthy child should gain from 5 to 7 ounces a week during the first four months of life, from 3 to 5 ounces during the fifth, sixth and seventh months and from 2 to 4 ounces from the eighth to the twelfth month. A knowledge of the strength of top milks is requisite; the upper sixteen ounces of average milk (4 per cent. fat), contains approximately 7 per cent. fat; the upper 11 ounces, 10 per cent. fat; the upper 8 ounces, 13 per cent. fat, and the upper 6 ounces, 16 per cent. fat. The proportion of proteid to 7 per cent. cream is about 2 to 1; in 10 per cent. cream 3 to 1; in 13 per cent. cream, 4 to 1, and in 16 per cent. cream, 5 to 1. In the whole (4 per cent. fat) milk the ratio is about 1 to 1. The sugar content is more constant, averaging near 4½ per cent. With these figures the proportions of different milk mixtures are easily calculated. The amount of sugar needed for the proper



nourishment of an infant is from 5 to 6 per cent. and to supply this in the mixture is should be added to the diluent in proper proportion. The instructions given on these points by Gittings are rather detailed and a list of formulas is appended.

### BOOK REVIEWS.

**DISEASES OF INFANCY AND CHILDHOOD.**—By L. Emmett Holt, M. D., Sc. D., LL. D., Prof. of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; Attending Physician to the Babies' and Foundling Hospitals, New York; Consulting Physician to the New York Infant Asylum, Lying-in Hospital, Orthopedic, and Hospital for the Ruptured and Crippled. With 241 illustrations, including eight colored plates. Third Edition. Published, 1906, by D. Appleton & Co., New York and London.

Holt's Diseases of Children is a book for the general practitioner rather than for the specialist, and as such has become popularly used during the two editions preceding the revision of this year. This third edition follows the same general form as the former ones, but is amplified in several chapters and some new work added. This edition is especially rich in illustrations which are excellent in subject and character.

**A LABORATORY MANUAL OF PHYSIOLOGICAL CHEMISTRY.**—By Elbert W. Rockwood, M. D., Ph. D., Professor of Toxicology and Chemistry and Head of the Department of Chemistry in the University of Iowa; Author of An Introduction to Chemical Analysis for Students of Medicine, Pharmacy and Dentistry. Second Edition, revised and enlarged. Price, \$1.00 net. F. A. Davis Company, Publishers, 1914-16 Cherry St., Philadelphia, Pa.

There are many books on Physiological Chemistry, large and small, all of which have their good points. But such a subject is a very difficult one to cover adequately at all, owing to the imperfect knowledge which has yet been obtained. As a guide to students this book is one of the best of the smaller works, and takes up the subject in a logical manner which shows the author's experience in teaching. It can be well recommended for the use of those who are in search of a simple, concise book on this subject.

**MODERN CLINICAL MEDICINE.**—Diseases of Metabolism and of the Blood, Animal Parasites, Toxicology. Edited by Richard C. Cabot, M. D., Instructor in Clinical Medicine in the Medical School of Harvard University. An authorized translation from the "Die Deutsche Klinik" by Julius L. Salinger, M. D. Cloth, \$6.00.

The object of this volume is to present a picture of diseases which were formerly designated as of "obscure causation" and to out-

line their treatment. Modern research has done much in clearing up the etiology and pathology of these conditions and the Germans are acknowledged leaders in this research. Each article in this volume is the work of a master in his special field.

**KOPLIK ON DISEASES OF CHILDREN.**—A Treatise on the Diseases of Infancy and Childhood. For Students and Physicians. By Henry Koplik, M. D., Pediatricist to Mt. Sinai Hospital, Ex-President American Pediatric Society, etc., New York. New (2nd) edition. Revised and enlarged in text and illustrations. Octavo, 868 pages, 184 engravings and 33 plates. Cloth, \$5.00; Leather, \$6.00 net. Lea Bros. & Co., Publishers, Philadelphia and New York, 1905.

An experience of twenty years in ambulatory and hospital practice has made the author of this work particularly fitted to perform the task of writing a practical treatise on the Diseases of Children. The book avoids the purely theoretical and impractical matters and emphasizes those of actual importance to the practitioner.

**INTERNATIONAL CLINICS.**—A Quarterly of Illustrated Clinical Lectures and especially prepared articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Edited by A. O. J. Kelly, A. M., M. D., Philadelphia. Volume II. Fifteenth series. 1905. Philadelphia and London: J. B. Lippincott Co. Cloth, \$2.00.

These volumes, valuable from the first, improve as they increase in numbers. The current volume contains five articles on treatment; five on medicine; eight on surgery; one on gynecology; one on ophthalmology; one on rhinology; one on physiology and one on pathology. All these articles are practical in character and the volume as a whole is a splendid investment for any practitioner.

**THORNTON'S POCKET MEDICAL FORMULARY** (heretofore known as The Medical News Pocket Formulary), new (7th) edition, revised to accord with the new U. S. Pharmacopeia, containing more than 2,000 prescriptions with indications for their use. In one leather bound volume. Price, \$1.50 net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1906.

This little book is too well known to need description. The seventh edition has been brought up to date and the changes made necessary by the new Pharmacopeia have been made. Such a book is extremely useful and may well fill a place in the armamentarium of any physician.

**THE PHYSICAL EXAMINATION OF INFANTS AND YOUNG CHILDREN.**—By Theron Wendell Kilmer, M. D., Adjunct Attending Pediatricist to the Sydenham Hospital; Instructor in Pediatrics in the New York Polyclinic Medical School and Hospital, New York; Attending Physician to the Summer Home of St. Giles, Garden City, New York. Illustrated with 59 half-tone engravings. 12mo., 86 pages. Bound in extra cloth. Price, 75 cents net. F. A. Davis Company, Publishers, 1914-16 Cherry St., Philadelphia, Pa.

The illustrations make up the attractive feature of this little work, and certainly one could not fail to get the worth of his money in those alone. But the text, which is necessarily brief, goes straight to the point and makes this little book an extremely convenient working manual. It does not attempt diagnosis or even go into diseases, but is confined simply to physical examination, methods and technique.

**CHRISTIANITY AND SEX PROBLEMS.**—By Hugh Northcote, M. A. Crown octavo, 257 pages. Bound in extra cloth. Price, \$2.00 net. F. A. Davis Company, Publishers, 1914-16 Cherry St., Philadelphia, Pa.

This book is more sociological and psychological than medical, but it is interesting to medical men who desire to look up the moral side of the sex question, as every worthy physician should. The author takes up such subjects as co-education, sexual in art, nature and ethics of impure language and others, besides the usual chapters which must be included in such a book. But his dealing is very readable and does not partake of the morbid, a side which writers on this question are prone to exhibit. His investigations have evidently been made in New Zealand and Australia, and this rather adds to than detracts from the interest of the book.

### THE PROPORTION OF NIGHT LABORS.

It is a common idea that the great proportion of labor cases terminate at night, especially after midnight. White, after analyzing 1,500 cases, points out that the popular idea is probably erroneous. In his series of cases a very slight fraction over one-half terminated during the night. The difference was too slight to have any weight. As an explanation for the fallacy, he suggests that night cases, because they disturb sleep, attract more attention and make more impression than cases in the day time. He suggests the

consideration of further statistics so that the truth or falsity of this popular idea may be definitely decided.—*Journal A. M. A.*

The army to-day is officered for a strength of 100,000 men except the Medical Department, which is only sufficient for 42,000. As the Surgeon General has succinctly put the case: "The three primary duties of the Medical Department are: (1) to preserve the effective strength of armies by military sanitation; (2) to care for the sick and wounded; (3) to conduct the administrative work of the department. To carry out these objects requires a highly specialized and complex organization, and a numerous trained personnel. Military sanitation is now recognized to be a well marked specialty in medicine, of which the average practitioner knows little more than he does of the methods of military medical administration. The second duty is that for which civil physicians can be used to advantage, while the first and third must be, in the main, in the hands of trained medical officers in order to secure efficiency, and to relieve the volunteer medical officer of the 'red tape' which, while a necessary evil, is so burdensome and incomprehensible to men not trained to government methods."—*Medical Sentinel.*

Chloroform should not be administered too close to a gas jet or gas stove, as its vapors are thereby decomposed, forming products which when inhaled by the patient, surgeon and assistants may give rise to disagreeable and even serious effects, such as nausea, vomiting and pulmonary and renal irritation.—*International Journal of Surgery.*

From a therapeutic viewpoint it is a great error to class rheumatoid arthritis as rheumatism, since in its treatment the use of tonics, a liberal diet, electricity, and massage are indicated rather than the free administration of the salicylates, which at best only relieve the pain.—*International Journal of Surgery.*

In operating for empyema of the pleural cavity, while the place of incision should correspond to the situation of the pus accumulation, it is well to remember that the point of election is immediately in front of the posterior axillary and on a level with the nipple.—*International Journal of Surgery.*



## SOCIETY MATTERS.

MINUTES OF THE 92<sup>nd</sup> ANNUAL MEETING  
OF THE  
VERMONT STATE MEDICAL SOCIETY

Held in Burlington, October 12 and 13, 1905.

*(Continued from Page 46.)**Second Day, Friday, Oct. 13th.*

Called to order at 9.30 A. M. by the President.

The report from the House of Delegates was presented to the Society by the clerk, Geo. L. Bates, and after a few minor corrections the same was accepted and adopted.

## REPORT FROM HOUSE OF DELEGATES.

Pursuant to the call, the House of Delegates assembled in the lecture room of the Medical College at 5.30 P. M. and was called to order by Geo. H. Gorham.

D. C. Hawley of Burlington was chosen to act as chairman and Geo. L. Bates of Morrisville, secretary.

Following this, the roll of delegates was called by the chairman and twenty-six responded to the call. No delegates answered from Caledonia, Franklin or Windsor counties.

After the examinations of delegates the election of officers was proceeded with. A motion was made to elect officers from the floor, which was carried. Two candidates were nominated for the presidency, viz.: M. L. Chandler of Barre and E. S. Allbee of Bellows Falls. Election by ballot being necessary, the chairman appointed as tellers Stickney, Miner and Beecher. The result of the vote gave Dr. Chandler the election. E. S. Allbee of Bellows Falls was next elected to the vice-presidency. Geo. H. Gorham was re-elected Secretary. B. H. Stone, Treasurer, and J. H. Blodgett, Auditor.

The place of meeting for the coming year was next discussed and Barre was decided upon.

Following this was the election of the Executive Committee, and Drs. Chandler, Gorham and Tinkham were duly elected to act.

The following Committee on Publication were elected: Geo. H. Gorham, G. R. Anderson and C. H. Beecher.

The present Committee on Necrology were re-elected, consisting of Drs. Eddy, Scofield and Howard.

The Committee on Legislation were next elected and consist of Drs. Bisbee, Holton and Campbell. Walter L. Havens of Chester Depot was elected anniversary chairman by acclamation. C. B. Ross of West Rutland was elected to serve as delegate to the American Medical Association for a term of two years.

On motion, the chair appointed the following gentlemen to serve as Nominating Committee to bring in a list of names to serve as delegates to the several colleges and societies, viz.: Bryant, Wheeler and McGuire, who presented the following names for the different delegations:

Massachusetts Medical Society.—G. R. Anderson of Brattleboro and F. L. Osgood of Saxtons River.

Maine Medical Society.—W. J. Aldrich of St. Johnsbury and H. H. Lee of Wells River.

New Hampshire Medical Society.—E. J. Fish of South Royalton and F. T. Kidder of Woodstock.

Rhode Island Medical Society.—W. S. Phillips of Arlington and F. W. Goodall of Bennington.

Connecticut Medical Society.—W. L. Wasson of Waterbury and S. S. Eddy of Middlebury.

White River Medical Society.—C. W. Ray of Chester and C. H. Beecher of Burlington.

Medical Department, University of Vermont.—C. W. Bartlett of North Bennington and M. F. McGuire of Montpelier.

Dartmouth Medical College.—C. S. Caverly of Rutland and W. F. Hazelton of Bellows Falls.

The names as presented by the committee were acted upon and elected by acclamation.

At this time a motion was made by A. L. Miner of Bellows Falls relative to the discontinuance of members of this society doing contract medical or surgical work for less than the customary fees in said localities for societies, organizations, corporations, etc. This motion as read is as follows:

## MOTION ON CONTRACT PRACTICE.

"On and after the first day of January, 1907, no member of this society shall accept the position of club, society, lodge, organization or corporation physician, or agree, or continue to do any medical or surgical work for any club, society, lodge, organization or corporation at a less rate than the regular or customary charges for like services rendered by other physicians in the same locality for patients not members of such club, society, lodge, organization or corporation.

"Also, that in no case shall any physician agree to attend the families of the members of such club, society, lodge, organization or corporation at half price, or less price than the regular rate.

"Nothing in this section shall be construed as preventing any member from attending the worthy poor at a less rate, or to give free services to those too poor to pay anything.

"Any violation of this article shall be considered unprofessional conduct, and it shall be the duty of the House of Delegates to expel such members when proof of such conduct shall be presented to them."

Discussion by several members of the House as to the legality to act for the Society in such matters, and also the effect it might have on different members of the society and the profession in general, was held at length. It was moved that the original motion should be laid on the table for one year and be treated as an amendment to the constitution, which was carried.

It was then moved that a committee be appointed by the chair to confer in regard to this matter with other societies, schools, etc., which was carried. Drs. Stickney, Miner and Beecher were named to act on such committee.

J. B. Wheeler suggested that the Transactions of the Society be published in the Vermont Medical Monthly, or by its possible successors. Dr. Beecher in substance put a motion before the house as follows: "The Vermont Medical Monthly Publishing Co. are willing to agree to publish the Transactions of the Vermont State Medical Society, including papers, discussions, business transactions, etc., and send to each member of the society for the next year a monthly copy of the magazine, for three hundred dollars (\$300.00), and they are willing to furnish the society members reprints as desired. The motion was put before the house as read and was carried.

A suggestion by Dr. McGuire to have the meetings held earlier in the season failed to come to vote.

Motion to adjourn by Dr. Allen was carried.

## LIST OF DELEGATES IN HOUSE OF DELEGATES.

Addison County.—S. S. Eddy and F. C. Phelps.

Bennington County.—L. H. Ross, L. H. Hemenway, F. C. Liddle.

Caledonia County.—None present.

Chittenden County.—J. B. Wheeler, D. C. Hawley, W. A. Lyman, C. H. Beecher, M. C. Twitchell, L. C. Holcombe.

Franklin County.—None present.

Lamoille County.—S. G. Start and Geo. L. Bates.

Orleans County.—B. D. Longe and J. F. Blanchard.

Rutland County—W. W. Townsend, M. R. Crain, W. N. Bryant and E. D. Ellis.

Washington County—H. S. Carver and A. C. Bailey.

Windham County—F. L. Osgood of Saxtons River and A. L. Miner.

Windsor County—None present.

Geo. L. Bates, Clerk.

The resolution introduced on Thursday by E. R. Campbell was brought up and on motion it was unanimously accepted and adopted.

D. A. Shirres of Montreal presented a paper entitled "Idiopathic Epilepsy." Discussion opened by M. R. Crain, followed by E. R. Campbell, J. H. Blodgett and W. C. Abbott; closed by Dr. Shirres.

W. S. Phillips then gave a paper on "Cerebro Spinal Meningitis, with reports of cases." Discussed by C. S. Caverly and L. A. Russlow; closed by Dr. Phillips.

Dr. W. C. Abbott of Chicago gave an interesting paper on "General Principles of Alkaloidal Medication." Discussed by E. S. Weston and closed by Dr. Abbott.

C. W. Bartlett gave the last paper on the program, which was entitled, "Puerperal Eclampsia." Discussed by Dr. Abbott.

Adjourned at 12.45 P. M.

The following physicians were in attendance:

#### PRESENT AT THE MEETING.

*Delegates, guests and visitors.*—Chas. L. Scudder, Boston; O. D. Eastman, Woodsville, N. H.; H. A. Hildreth, Bethlehem, N. H.; Wallace M. Pierce, Providence, R. I.; D. A. Shirres, Montreal; W. C. Abbott, Chicago; Chas. S. Buchanan, Troy, N. Y.; F. H. Godfrey, Chelsea; Chas. Gardzakian, Dorchester, Mass.

*Members.*—L. C. Holcombe, Milton; P. E. McSweeney, Burlington; W. H. Giddings, Bakersfield; J. A. St. Germain, Winooski; C. G. Andrews, Burlington; C. A. Pease, Burlington; F. C. Liddle, Dorset; C. H. Beecher, Burlington; Lyman Allen, Burlington; L. H. Gillette, Wilmington; F. J. Arnold, Burlington; C. W. Howard, Shoreham; W. R. Prime, Burlington; J. W. Courtney, Burlington; C. B. Dunn, Swanton; E. R. Campbell, Bellows Falls; Geo. L. Bates, Morrisville; J. S. Coburn, Milton; J. F. Blanchard, Newport; H. S. Carver, Marshfield; H. D. Holton, Brattleboro; F. R. Stoddard, Shelburne; C. S. Scofield, Richford; J. L. Potter, East Charleston; E. F. Root, East Burke; M. D. Warren, Cabot; F. L. Osgood, Townshend; Joe. W. Jackson, Barre; M. L. Chandler, Barre; O. G. Stickney, Barre; M. C. Twitchell, Burlington; A. L. Bingham, Williston; S. G. Start, Cambridge; M. J. Wiltse, Burlington; W. H. Ranks, Shelburne; W. E. Welch, Franklin; A. L. Miner, Bellows Falls; C. F. Camp, Barre; A. J. Mackay, Peacham; E. S. Allbee, Bellows Falls; F. M. Rogers, Alburg; R. M. McSweeney, St. Johnsbury; C. F. Dalton, Burlington; J. C. Breitling, Lunenburg; Mary M. Platt, Shoreham; Geo. B. Hulburd, Jericho; S. E. Darling, Hardwick; T. R. Stiles, St. Johnsbury; T. J. Strong, Burlington; J. B. Wheeler, Burlington; J. R. Patton, Fairfield; P. H. McMahon, Burlington; W. N. Bryant, Ludlow; L. H. Hemenway, Manchester; H. H. Swift, Pittsford; G. G. Marshall, Wallingford; S. W. Hammond, Rutland; F. E. Clark, Burlington; C. U. Johnson, West Berkshire; D. C. Hawley, Burlington; F. L. Osgood, Saxtons River; S. W. Paige, St. Albans; H. E. Lewis, Burlington; C. S. Caverly, Rutland; A. D. Patton, East Fairfield; F. S. Hutchinson, Enosburg Falls; H. O. Joyal, Enosburg Falls; S. E. Maynard, Burlington; David R. Brown, Danville; H. L. Williamson, Burlington; W. W. Townsend, Rutland; J. H. Blodgett, Saxtons River; G. O. Coutu, Burlington; J. G. Thibault, Winooski; F. C. Lewis, Burlington; A. S. C. Hill, Winooski; F. C. Brigham, Jamaica; F. C. Phelps,

Vergennes; Geo. F. B. Willard, Vergennes; R. W. Johnson, Burlington; A. M. Norton, Bristol; Geo. F. Edmunds, Bristol; J. S. Hill, Bellows Falls; L. H. Ross, Bennington; E. B. Watson, Williamstown; O. C. Baker, Brandon; E. D. Ellis, Poultney; C. B. Ross, West Rutland; F. M. McGuire, Montpelier; J. E. McSweeney, Barre; A. C. Bailey, Randolph; B. H. Stone, Burlington; F. C. Morgan, Felchville; J. H. Buffum, Wallingford; C. W. Bartlett, North Bennington; W. S. Phillips, Arlington; C. M. Ferrin, Essex Junction; H. L. Wilder, Burlington; H. V. Hubbard, Barnard; F. A. Petty, Fairfax; L. A. Russlow, Randolph; H. A. Elliott, Barnet; J. N. Jenne, Burlington; J. W. McArthur, East Barre; C. W. Ray, Chester; J. W. Esterbrook, Brandon; L. L. Leonard, Barre; B. D. Longe, Newport; J. E. Dewey, Barre; M. H. Eddy, Middlebury; L. B. Morrison, Burlington; R. F. Willard, West Topsham; G. H. Dill, Proctorsville; B. D. Colby, Sudbury; E. R. Brush, Cambridge; J. L. Welch, Proctor; C. H. Johnson, Burlington; H. H. Lee, Wells River; S. S. Eddy, Middlebury; C. E. Cole, Readsboro; C. W. Strobell, Rutland; W. S. Nay, Underhill; Geo. H. Gorham, Bellows Falls.

Total attendance, 135.

Geo. H. Gorham, Secretary.

#### BURLINGTON AND CHITTENDEN COUNTY.

The regular meeting of the Burlington and Chittenden County Clinical Society was held February 28, when Dr. John McRae of Montreal presented a paper on "Compensation and its Effect on Prognosis."

#### WHITE RIVER MEDICAL ASSOCIATION.

White River Medical Association held its regular meeting at White River Junction, March 1, with the following program: "Infective Osteomyelitis," Percy Bartlett; "Some Thoughts on Medical Education," William T. Smith; "An Effort to Establish Uniformity in the Charges for Medical Service," general discussion opened by President C. B. Doane.

**SUGGESTIONS ANENT CANCER.**—Dr. Bainbridge, of New York, in a lecture on cancer and its treatment, suggests the following: 1. All cancer begins as a benign growth. 2. There is, therefore, a true pre-cancerous stage, in which removal is a sure means of relief. 3. The disease is absolutely local in its beginning and if fully extirpated a cure should result. 4. Extension may take place by direct infection of the surrounding tissue, but it is usually through the lymphatic or blood channels. 5. There is a varying degree of malignancy, some growths tending to return much more readily than others. 6. The system is poisoned by the production of toxins. 7. General malnutrition, as well as diminished vitality of the non-cancerous tissue in the neighborhood of malignant disease, as a rule, tends to increase the rapidity of the local extension and renders more likely the development of metastases.—*Am. Jour. of Progressive Therapeutics.*



## ORIGINAL ARTICLES.

### COMPENSATION, AND ITS EFFECTS UPON PROGNOSIS.\*

By John McCrae, M. B. (Tor.), L. R. C. P. (Lond.); Professor of Pathology, University of Vermont College of Medicine; Associate in Medicine, Royal Victoria Hospital, Montreal.

To examine the body of a sick man and give a prognosis as to his probable extent of life is a very hard and at times impossible feat. And this is because in the diseased organs we are dealing with certain factors that we have often seen before, but in the resistance of the body or in the ability for compensation, we are dealing with something we cannot measure. Compensation or adaptation to a new set of circumstances cannot be measured in foot-pounds; it is a trite saying that "no man can tell what he can do till he tries." Yet we are often asked to predict what a body will do, what an organ will do, without having had the privilege of seeing what this body or this organ is capable of. The moral of all of which is—not that I can give you any new trick of prognosis, but that I am going to be somewhat hopeless upon the subject, and point out difficulties that beset our path. Yet, this is not all loss. If you are a skeptic upon the actions of many drugs; if you look at lesions and wonder, with a hopeless mind how such things could ever be cured, remember that the same compensation which renders of some effect your prognosis may assist the organism to overcome the lesion.

By compensation one means of the ability of the body to adapt itself to any new set of circumstances; for example, if half a lung be in a moment removed from usefulness by an impact, the body will suddenly find itself compelled to subsist upon one and one-half lungs—and death will sometimes occur before the body can become accustomed to its new circumstances. But if this necessity for living upon reduced lung area be gradually forced upon

the body as in a case of ulcerative tuberculosis, where the useful lung is removed bit by bit till the available lung left seems to be of the size of a fist—this constant adaptation is compensation. If there be a sudden thrombosis, the collateral circulation, that is sufficient for its necessities, will at once widen and a compensation will occur. These are the processes we always think of as compensation, but there are others that are so automatic that we are apt to overlook them entirely. Such are the thousand give-and-take transactions that go on every day. Much heart work will by a high blood pressure increase kidney secretion, with the result that the labor is lightened; in a case of Bright's disease the colon takes up functions to a remarkable extent; free purgation will go far to relieve a laboring heart; counter irritation, as usually explained, is a compensation.

It has seemed to me that this power of adaptation is possessed most by those tissues which are lowest in the scale. The least specialized, least trained cell can most readily change its purpose, and do the work of a fellow-cell; just as a laborer can readily enough change his work from digging to sawing wood. But where work is more specialized, the same cannot be, for the lawyer cannot be a physician on call. The nervous system, the most specialized of tissue, has to give and take with other tissues. True, it has a little between one cell and another, but between nervous and other tissue little or none. Here compensation as an influence on prognosis becomes a comparatively simple matter. I would not be understood to say that the prognosis in a case of nervous disease is easy, because we know the great obstacles that beset examination. But in this way it is so, that if we remove a definite collection of nerve cells, there is no other part of the body that can temporarily take up its work. Later, other nerve cells may, but at the time, the organism must simply do without it. Of certain other highly specialized tissues this is also the case. Reproductive cells are necessary for reproduction—and in their loss, the prognosis is absolute, and in all higher forms of life compensation is not established. The thyroid gland has a function that is not transferable; likewise the adrenals; the pancreas has apparently no vicar upon which its work can devolve. But below this, in the social scale of organs,

\*Read before the Burlington and Chittenden County Clinical Society, Feb. 28, 1906.

we come to a series of problems where our prognosis at once becomes complicated. Such are cases where the heart, blood vessels, organs of respiration and main organs of excretion are concerned, to go no farther for examples.

I cannot deal with all the ways in which compensation can be established, but I can at least indicate some of them. A man of middle age with repeated attacks of broken compensation lately died in the ward in which I was attending. Always dyspnoeic, for the last eight years before death he developed so great and sudden pains in the chest with gasping, cyanosis and mental agony that the diagnosis of pulmonary infarct seemed justified. Autopsy showed that both his pulmonary arteries were thrombosed, to so great an extent as to occupy four-fifths of the total lumen of each vessel. The post-mortem clot had formed as a thin ribbon lying beside the thick cord-like ante-mortem clot in each vessel. Consider what an adaptation to altered circumstances was here—life did not fail though, for 48 hours, there was a comparatively sudden cutting off of say four-fifths of the available blood for aeration.

It has seemed possible to me that the slow pulse of increased intracranial pressure may be a compensation to prevent the further development of it. The rapid respiration of anemia is an adaptation of the needs of the body to fewer corpuscles—an overworking of these corpuscles to carry the required oxygen. The slow respiration of a hibernating animal, the lowered metabolism, the lessened excretion is a beautiful coordination of laws. The body in sickness employing these adaptations and compensations is exactly comparable to a man who lives on \$10,000 a year suddenly being compelled to live on \$3,000. He checks waste. He still deals with the butcher, the baker and the candlestick maker, and he and his family still live—on a lower capitalization, so to speak. He still lives satisfactorily, but has adopted the lower scale. This is the very thing that the body does. The man who has 1,000,000 red cells instead of 5,000,000 is living in this way. He can live his quiet life, but as the \$3,000 man has had to give up giving large dinner parties, so the anemic has to give up half-mile runs. Can you give a prognosis of how far the 1,000,000 red corpuscle man will go? Not until you know how capable his tissues are! Just as you cannot tell how nice a dinner party the \$3,000 man will give till you know how capable a housekeeper he has.

The prognosis of the degree of damage the femoral thrombosis will make, is not to be made until one can tell how perfect is the collateral circulation. A severe hemorrhage from piles may be helping an obstructed portal circulation up the hill, and hemoptysis may be the saving of the left auricle in a mitral stenosis.

At the risk of being tedious, let me speak briefly of the interdependence of organs in a case of, for example, mitral stenosis. The left auricle, distended and dilated shares its load with the lungs, and the right ventricle, not yet warned of the trouble, so to speak, keeps pouring blood into the lungs at the accustomed rate. Hemoptysis may help, but at last the blood that crowds the lungs passes the word to the right ventricle, and it has at last to give in—and dilate. But even it has its helper, and the tricuspid valve obediently gives way, and the blood regurgitated into the vena cava throws the onus upon the liver, which struggles manfully with its overload by increasing its size, until it can no further, and passes back a share of its blood upon the portal circulation, which bears the brunt for a while, till ascites comes to relieve it. In all this, who is to predict the result till the last vote is cast—and for a time, the casting vote may lie with the humble hemorrhoid. Is there then no safe prognosis possible? Perhaps there is when you see one of these organs called into requisition rapidly after another, showing that no one of them is very powerful, in his own strength, to carry on the fight. I have ventured to present a case which interested me greatly in its clinical aspect, which I was able to follow to autopsy, which really furnished the text for this rambling discourse.

The case referred to is instructive in two distinct ways. It was a remarkable, though by no means extreme, example of hyaloseritis of the pleura and peritoneum. It was also a remarkable instance of the perfection of compensation in an extreme case of stenosis of the mitral, tricuspid and aortic valves of the heart. This will be referred to later, but it is of interest to state that the patient was one of the first admitted to the Royal Victoria Hospital in 1894, at which time it was thought she was near death, whereas her death occurred in January, 1905, more than ten years later; during this period of ten years she was always an invalid, and at no time did her symptoms become much ameliorated. Thus, a somewhat minute consideration of the case shows how life has



been prolonged and the body functions carried out with a degree of perfection not often seen.

To dispose of the morbid anatomy of the case, the heart was the seat of old endocarditis of all three valves, with stenosis of the three orifices, aortic, mitral and tricuspid. Well marked dilatation and hypertrophy were present, the heart weighing 415 grams. Yet with this, there did not exist any high degree of muscular damage. The pericardium was distended to huge size by 750 c. c. of clear, limpid fluid, while no other serous surface showed any secretion at all; there was no adhesion of any kind in the pericardial sac, and its greatest transverse diameter was 22 c. m. The most prominent feature about the heart, before it was opened, was the great size and distension of the right auricle, which stretched from side to side of the cavity like a distended stomach, and gushed blood in great quantity as soon as it was opened. That part of the anatomical diagnosis that is of less interest may be at once disposed of. There were present: Milk spot of heart, obsolete tuberculosis of right peribronchial glands, chronic mucopurulent bronchitis, ald bilateral pleural adhesions, complete arteriosclerosis with atheroma, sclerosis of pulmonary artery, induration of abdominal organs; hyaloseritis with contraction of liver, chronic congestion of alimentary tract, acute parenchymatous upon early chronic interstitial nephritis, cholelithiasis, hemorrhoids, cysts of the broad ligament.

To refer again to the heart lesions, the aortic cusps were adherent in a large mass that was densely calcareous, and left an orifice of the shape of a leech-bite, the free opening in the centre being about 5 m. m. in diameter, and the points of the three-pointed star having their sides so closely opposed that they allowed scarcely any passage of blood between them. The circumference of the tricuspid valve was 5.5 c. m. and its free, thick edges left the opening circular, like the half-shut diaphragm of a microscope. The mitral orifice appeared as a crescentic slit, 6.5 c. m. in circumference. The edges were fibrous and dense, and, though of greater measurement, the button-hole nature of this stenosis prevented as free passage of the finger tip as was allowed on the right side of the heart. All three valves must have been incompetent, to judge from the hardness of the edges of the cusps. Apart from the valves, and a small calcified area 1 c. m. in diameter in the right auricle, there was no further evidence

of endocardial thickening. The thickness of the left ventricular wall was nowhere 2 c. m. and the right ventricular wall averaged 0.6 c. m.

Keeping in mind the structural changes in the heart, one is astonished to find that the lungs are dry. The pleural cavities are obliterated by old adhesions, and the lung tissue is for the most part dry, pinkish-brown in color, and not at all edematous. The exception referred to is an area supplied by a branch of the pulmonary artery which contains a brownish-red clot which adhered strongly to the vessel wall. The lung tissue affected is meaty-looking, like compressed lung, floats deeply in water and does not look like a typical infarct. The microscopic examination of the lung showed considerable collapse, and much fibrosis. The capillaries did not seem congested, although there were many alveolar "cardiac" cells desquamated from the walls, lying in the air-sacs.

As one observes the peritoneal cavity, leaving aside the liver condition, and the adhesions around the liver and spleen, it is seen that the cavity contains 15 c. c. of clear, yellowish fluid, with no adhesions other than those spoken of above. Anasarca is slight, and faint pitting over the ankles is obtained, but the condition would escape a casual glance.

Such a strange combination of circumstances as this severe stenosis and incompetence of three valves (the mitral and aortic valves were certainly incompetent), with the great dilatation and hypertrophy, with dry lungs, a dry peritoneal cavity, and slight anasarca, is sufficiently peculiar to excite a reasonable curiosity as to the manner in which the circulation had been carried on. As we shall see when discussing the clinical history, ascites, great edema, hydrothorax, and edema of the lungs have all existed at earlier periods of the patient's history, and it is to be concluded that the activity of absorption of the serous surfaces has continued in a high degree, and that whatever forces in the heart and arteries were at work at one time, have lately been so modified as not to produce the effects they previously did produce.

With regard to the ascites which would be expected to accompany this condition, the clinical reports prove that this symptom was present in 1894, and continued to be present with remissions, until the fall of the year 1901, after which it was never great. It is generally supposed to be a constant factor in hyaloseritis,

and the great contraction of the thickened peritoneum in the vicinity of the portal vein would tend to cause ascites by its pressure directly upon the portal vein at its point of entry. Despite this triple reason for the presence of fluid, it is absent. When the condition of the lungs, and the absence of edema are considered the first suggestion that the activity of the peritoneum is alone accountable is scarcely tenable; it seems more likely that the blood pressure has been actually lowered by the gradual change in the orifices. At first, there has been stenosis with engorgement of the left auricle, and the pulmonary ventricle has doubtless thrown a large quantity of blood into the lungs, so that there ensued a period of constant edema of those organs, as proven by the clinical notes. After the tricuspid orifice became stenosed, a less quantity of blood is allowed into the right ventricle, and therefore a lower pressure is caused in the lungs than heretofore. As a result of this lower pressure, the pulmonary edema gradually disappeared. Since the time at which the aortic stenosis was completed, the amount of blood regurgitated to the left ventricle, though relatively great, was actually small on account of the high degree of stenosis; it is evidently necessary to think of the heart working with a very small, reduced "capital" of blood; the notes do not contain any reference to the blood pressure, which may be supposed to have been low.

The patient was admitted fourteen times to the hospital between October, 1894, and January, 1905, during which time she was able to take great care of herself and was never active, scarcely walking farther at a time than across her room. A Canadian by birth, her family history is not notable; she had measles as a child, acute rheumatism at 7, jaundice at 9, inflammation of the lungs at 10 and 14; dropsy occurred first at 29 and again at 30. At 34 she had scarlatina, and at 35 she entered the hospital first; it is notable with reference to the hyaloseritis that one of her complaints at first entry was "severe ache" in the liver region, which was present on each succeeding admission until the year 1902. The region of the liver was nearly always very tender, and on one or two occasions a friction rub was obtained over it, whereupon a diagnosis of perihepatitis was made, and subsequently clinically confirmed.

The gradual progress of the heart condition measured by clinical signs, can not be followed

with any exactness, nor is there any special gain in doing so, for the lesson of the whole case seems to lie in the perfection of the compensations, indicated in various ways. The gradual disappearance of ascites might be due to a strengthening of heart power, or a decrease in the total circulatory bulk. To explain this last, it can be understood that the body may be nourished, the necessary blood aerated, and the required excretion brought about with a minimum bulk of blood, and a small outlay of energy. This "working on small capital" does not prevent the possibility that the functions of the body, reduced as they are, may be carried out more satisfactorily than under what were apparently more prosperous times—in witness of which, may be noted the disappearance of edema of the lungs and the absorption of the ascitic fluid.

There is evidence in the appearances of the organ that yet another adaptation may be observed, viz.: that the right auricle was acting as safety valve to the liver and to the right ventricle, taking so much extra blood that it underwent great dilatation. Ordinarily, this would be relieved by the liver, and finally by the abdomen taking the brunt of the extra blood, but this, for some years before death, was probably impossible, by reason of the great pressure upon the liver by the hyaloseritic layers. The pressed-upon portal vein has doubtless transmitted less blood, which would tend to ascites. In course of time the natural increase of this stagnation is prevented by the small amount of blood which was naturally coursing in the portal system; under these circumstances, during some period of betterment in the patient, the peritoneum has prevailed over the ascites, and the peritoneal cavity has been emptied, never to refill.

The truth may actually rest in a combination of these several factors, reduced bulk of blood, reduced blood pressure, heightened activity of the absorptive powers of the serous surfaces, and gradual dilatation of the right auricle: thus, there would exist a "give-and-take" between the organs concerned, viz., the auricle, the liver and the peritoneum. During the long course of the illness, the liver by reason of hyaloseritis, has had to drop out of its active share of this work, but before this occurred, the other two organs had been gradually accustomed to share the work it could no longer perform. It is not easy to explain how side by side we find a pericardium distended



by 750 c.c. of fluid and a thoracic cavity, obliterated, it is true, by adhesions, in which the adhesions are not even edematous.

One finds it a difficult matter to assign the cause of death, for most of these cases die from edema of the lungs. The kidneys may be ruled out, as microscopic examination showed comparatively little change. Paradoxical as it sounds, it may be said that, to judge by symptoms, the patient was nearer death on many occasions during the last ten years than at the time when death actually did occur.

A case such as I have recited sets at naught one's preconceived ideas of prognosis—here it deceived the clinicians who successively came to have charge of it during ten years. The principle which it illustrates is a far-reaching one, and the moral is, I am afraid, that in many diseases of long standing the physiologist and the clinician are not much better at prognosis than is the actuary. The actuary says that of a thousand men with a certain lesion, 800 will be dead within a certain term of years; the text-book states the facts of prognosis in this same way, and is merely a finger-post that points in a general direction. As to the individual case, this paper has perhaps indicated where some chief sources of error may lie. It was a wise mind that formulated the dictum, "It does not matter so much what kind of a disease the man has, as what kind of a man has the disease."

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## THE DIAGNOSIS AND TREATMENT OF SOME CHRONIC DISEASES.\*

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*By E. R. Campbell, M. D., of Bellows Falls, Vt.*

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How better could we commence a paper with this title than by quoting from so eminent an authority as the late Dr. Jacob Bigelow of Boston, who in an address delivered about the middle of the last century says: "If the question be asked, what makes a great physician, and one, who is appealed to by his peers and by the discerning portion of the public, for counsel in difficult cases, I would answer, that he is a great physician who above other men understands diagnosis." And, gentlemen, I believe that we of the present day can agree

with him *in toto* in this respect. But how few of us, yea even the most eminent experts in our profession, always make a correct diagnosis. Not many years ago I heard a professor of surgery in one of our eastern medical colleges confess that he made a positive diagnosis of cancer of the stomach in the case of a patient, in fact he was positive he could feel the neoplasm. He also states that several of his eminent colleagues made the same diagnosis. Some three years after he saw the patient who, without submitting to any surgery, reported herself entirely well. I believe that the doctor admitted that he had erred in his diagnosis.

I recall a frequent summer visitor to my town, in whose case more than five years ago two or more of Boston's most eminent physicians diagnosed cancer of the intestines, giving the patient but a short time to live. Last summer he reported himself as entirely recovered. I recall another case in my own practice where persistent vomiting and other symptoms for weeks led to a suspicion of malignant disease of the stomach. Recovery and several years of good health and hard work lead me to believe that there was no malignant trouble in this case. Such cases as these should lead us to beware of a too positive diagnosis in chronic diseases, even where symptoms seem well nigh conclusive. If our diagnosis of gastric cancer be correct, our patient has only a short time to live, as I believe that Thompson in his late work on "Practical Medicine" states the consensus of medical opinion when he says: "The disease is invariably fatal with the exception of a few cases in which excision of the growth has not as yet been followed by its return after a period of a year or two."

Regarding treatment of this condition, it is purely palliative. For severe pain, morphine in large doses may well be given, for the inevitable fatal issue of the disease justifies its use in large doses. But if we diagnose cancer of the stomach for some less deadly disease, we may, I believe, do our patient much injury, for while we admit that at the present time mental healing is not yet a fully established remedy in most pharmacopeias of to-day, I think that most psychologists will agree with me, that a mental conviction on the part of the patient that his disease is incurable is a serious bar to the most skillful treatment. Remembering cases like those just mentioned, let us always give our patients the benefit of the doubt, and not pronounce their death warrant

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\*Read before the Vermont State Medical Society, Oct. 13, 1905.

while there is a possibility that we may be mistaken. In some other forms of chronic diseases we can often push our "mixed treatment" to the limit, even if the diagnosis is slightly uncertain, for years ago some authority said: "In cases where the diagnosis is uncertain, always give iodide of potassium."

Now, while we might, perhaps, with profit discuss other forms of chronic disease more or less prevalent at times in our respective localities, I shall devote the remaining part of my paper to that disease which is always with us, and which Dr. Oliver W. Holmes so aptly and so truly termed the "Great White Plague"; that disease which annually causes in our Green Mountain State more deaths than smallpox, scarlet fever, diphtheria, typhoid fever and measles combined; a disease which causes annually in our state about 500 and in the United States in 1900 caused over 110,000 deaths; a disease which experts tell us is curable in many cases and absolutely one of the preventable diseases.

Now, as general practitioners have we given tuberculosis the study and attention that its prevalence and high death rate demand of us, and ought we not to give more time and thought to its diagnosis and treatment? As a general practitioner I firmly believe that in *incipient* tuberculosis its absolute diagnosis is extremely difficult and impossible in some cases, that in its early stages there is no pathognomonic sign and no constant set of symptoms that can be relied on as absolutely indicating the presence of the disease.

I was much interested and instructed in the report of the committee on early diagnosis of the National Association for the Study and Prevention of Tuberculosis, at its meeting in Washington last May, and gladly quote from them. The term phthisis is in their report made synonymous with the well-developed stage of pulmonary consumption. They say: "The diagnosis of phthisis, that well-developed stage of pulmonary tuberculosis, offers no difficulty whatever, the symptoms are well marked and typical; the pulmonary signs easily discoverable; the expectorations contain bacilli; the clinical picture is so typical that a mistake in diagnosis cannot well be made, even by the superficially trained observer." This, gentlemen, is their picture of the well-developed case which any of us could easily recognize; in fact of these cases we might almost say of them that "he who runs may read" them. Of course

we are all well aware that the discovery of the tubercle bacillus in the sputum of patients suffering from this disease constitutes a diagnostic means of indisputable accuracy. Hence the need for us of frequent bacteriological examinations at our thoroughly equipped State Laboratory of Hygiene, where this work is done at the expense of the state. A portion of the report was so instructive to me, especially the use of the terms "open" and "closed" states, that I beg leave to again quote: "The consideration of the fact that tubercle bacilli can appear in the sputum only after the caseation and breaking down of a tubercle situated near a bronchus, or bronchiolus, makes it certain that tuberculous changes can and do occur previous to the appearance of the bacillus in the sputum. This is borne out by the clinical observations of a recognizable stage of tuberculous lung involvement *before* bacilli are found in the sputum. The adoption of the word 'closed' designating this stage, in opposition to 'open,' i. e., with bacilli *found* in the sputum can be recommended for more general introduction."

The committee further state that "from the therapeutic standpoint the diagnosis of pulmonary tuberculosis in its closed stages is of the utmost importance; the chances of permanent recovery diminishing proportionately with the postponement of rational therapeutic measures. Those measures being, on the whole, nothing but a radical change in the patient's mode of life, will also interfere less with his usual occupations, the earlier the diagnosis is made." They also claim that the physician assumes a very grave responsibility who declines to make a positive diagnosis of tuberculosis on account of the absence of bacilli in the sputum, and they emphasize that great caution in this respect can not be urged sufficiently. And I believe that we all, both expert and general practitioner, will agree that when certain signs indicate a suspicion of the disease we should instruct the patient carefully as to his mode of living and closely watch the case. Lots of fresh air and sunshine and an abundance of good nourishing food well borne by the stomach, let us remember, is good treatment for any wasting chronic disease. Then why not say so to our patient and also inform him that under modern treatment pulmonary tuberculosis, in its incipient form, is one of the curable diseases.

While most experts to-day believe that tuberculosis is not hereditary, those born with a



weak constitution and lacking in normal thoracic development and respiratory power are more prone to the disease. Hence as predisposing factors we may mention tuberculosis among family and intimate friends, dusty and confining occupations, intemperance and in fact anything that lowers the vital powers.

If individuals living under such environment are exposed to possible contagion from tuberculosis, it has been well said: "If they exhibit even such slight signs as loss of weight, with persistent dry cough, even without the presence of tubercle bacilli in the sputum, it is extremely rash to make a negative diagnosis as to tuberculosis. Patients of this kind must be kept under observation until they have regained their normal weight and have lost their cough before they can be considered to be above suspicion. It is much better for them to have been treated, perhaps needlessly, for tuberculosis, than to have been told that they were not suffering from the disease because there were no absolutely pathognomonic signs, and so perhaps lose precious time just when it was most valuable." Quoting further from the able editorial on this report: "It is sometimes said that disturbance of pulse and temperature must be considered as necessary for the diagnosis of an active tuberculous process. In many patients, however, it will be found that the pulse shows this disturbance only after exercise and that the temperature is elevated only at times when the patient is tired or at such periods of physical stress as during menstruation."

It is considered important that advantage should be taken of times like these in order to determine how susceptible to changes of pulse and temperature the patient may be and thus deduce the presence of some infectious element causing an instability of these usually well balanced functions. With regard to physical signs in the lungs, the report of the committee emphasized particularly the fact that rales may be heard with much more certainty at certain times than at others. They may be heard quite easily on damp days and yet looked for in vain on dry days. They may be heard when the patient is tired, much better, as a rule, than when he feels well. In the case of women, rales are much more likely to be present and audible during the menstrual period than at other times. It is the knowledge of such aids to diagnosis that enables the expert to recognize the disease at a much earlier period than it is possible for those who consider

that a single hurried examination enables them to tell something definite with regard to the existence of incipient tuberculosis.

And now to sum up some of the points emphasized by the committee on early diagnosis. In addition to what we have already mentioned, they advise "a most painstaking percussion and auscultation of the chest over all parts, always comparing the two sides; marked dullness is but rarely found over portions of the lungs in incipient tuberculosis; the percussion will elicit sometimes a significant retraction of one apex as compared with the other; particular attention should be paid to the upper portions of the lungs and also to the lower borders and to the axillary regions.

"The rough and slightly diminished respiratory murmur as the earliest auscultatory sign in early pulmonary tuberculosis cough may or may not be present. Hemoptysis, in the absence of other causes among all the symptoms that may be found in the history, is one of the greatest signs. Physical signs are sometimes absent for weeks after the hemoptysis. They speak of vocal fremitus in early cases as giving little information. Physical examination of the chest by inspection, palpation, percussion and auscultation, if carefully and properly performed, will give more direct evidence than any other methods.

"It may be said that the newer method of examination, notably that with the Roentgen rays, cannot, at least in the present state of development, claim superiority over the results obtained by the before-mentioned methods. Only passing mention can be made of other diagnostic methods, of which tuberculin is the most important. Although it is well understood that by injection of small doses of tuberculin and by the febrile reaction thus produced in tuberculous individuals, we can diagnose early tuberculosis, the method necessitates great care in its application, and an apparatus too complicated for general use. The dangers of the preparation in the hands of one well acquainted with the method are very slight, but by applying carefully the other means of observation and examination, a case will rarely be found in which it would add considerably to the information gained. The fact that certain salts, especially iodine salts, increase catarrhal symptoms and this makes them more perceptible to auscultation, has led to their administration for diagnostic purposes." Their closing paragraph reads: "Various other methods

have been advocated for the early detection of tuberculosis, inoscopy, sphygmograph, sphygmomanometry, serum test, etc., all apt to increase our knowledge of the disease, but of no practical advantage in the every day diagnosis of so frequent a disease. The careful and painstaking application of the methods, well taught and well understood, with the simplest apparatus, but applied with a broad conception of the pathogenesis of the disease, will bring about much earlier diagnoses than are usually made."

Now a few words regarding the frequency of the disease. Osler says: "The statement by Bouchard of the post-mortems at the Paris morgue, generally on persons dying suddenly, the percentage found with some evidence of tuberculous lesions, active or obsolete, is as high as 75%. Large as these figures appear, they are probably not very incorrect; if, as has been done in Ribbert's laboratory, a systematic inspection is made for the purpose, tuberculous lesions are found in practically 100% of the bodies of adults." From this, to me surprising and somewhat grewsome statement by so eminent an authority as Osler, I turn with a feeling of relief to an editorial in the *Journal A. M. A.* of July 1, 1905, where Orth is quoted as finding evidence of tuberculosis in only 27 to 28% of 1,087 autopsies, and Kraemer's conclusion that the assumption that every adult harbors in his body an active or burned out tuberculous focus is not as yet warranted by the evidence at our command. Still I think we must all admit the sad truth of the statement that tuberculosis is unquestionably more prevalent than any other malady affecting mankind and that it annually causes more deaths in Vermont than all the other infectious diseases combined.

But just now a word concerning "the brighter side of the picture." Those experts who have most carefully studied the matter assure us that a large per cent. of these cases can be cured if proper measures are used early and that tuberculosis is a preventable disease. Now, when there is only a suspicion of the disease, as I have before stated, why not tell our patient frankly what we fear, that while no tubercle bacilli appear in the sputum, from the clinical symptoms we are afraid of the disease being present in its incipient or "closed" stage and advise appropriate treatment at once?

And what is the most appropriate treatment at the present time? Undoubtedly the first

requisite is plenty of fresh air, both day and night. As pulmonary tuberculosis is a disease of malnutrition, suitable diet to improve the nutrition is of prime importance. This should consist of milk, butter, eggs, nuts, fruit and other nourishing food and a study should, I believe, be made of each individual case as to the food best suited to him. Alcohol, tobacco, tea, coffee, vinegar, etc., should be forbidden. At times the rest treatment is essential. Regarding drugs, Dr. John F. Russell, in addition to the emulsion of mixed fats, strongly advises the daily use of a cathartic, and I quote his words in support of his position: "I have always advocated what to most physicians seems the extravagant use of cathartics because I believe their systematic use increases digestive capacity, hastens absorption, aids the removal of circulating poisons and reduces fever." In his late report to the Executive Committee of the Post-Graduate Medical School he advises two ounces of vegetable juice twice daily. The juice is made of equal parts by weight of raw vegetables and fruit, such articles as potatoes, beets, turnips, apples, summer squash, string beans, etc., being used. He claims that his six months' observation has shown that this vegetable juice is a valuable addition to diet.

In a recent article in the *Journal A. M. A.* by Dr. Bowditch of Boston and Dr. Dunham of Rutland, entitled "Six Years' Experience at the Massachusetts State Sanatorium for Tuberculosis," this statement is made regarding treatment: "The greatest possible amount of fresh air, good food, judicious exercise and general supervision as far as possible in order to guard against the mistakes which arise through ignorance in whatever direction. \* \* \* As to the use of any one specific remedy, we can frankly say that we have thus far found nothing to equal the effect of the so-called hygienic treatment, although we have at times experimented with certain vaunted remedies with negative results." Reviewing their six years' experience since the sanatorium was established by Massachusetts in 1898, 3,300 patients have been admitted to May 1, 1905. I quote some of their conclusions: "When we consider the utilitarian side, can there be any doubt when reading the large percentage of those who have returned to their homes and have become active wage earners again, that the money expended has been fully repaid in the renewed vigor and usefulness of large num-



bers of our citizens? It has been, moreover, often said, but the truth cannot be emphasized too much, that quite apart from the good done to the individual patient, stands the far-reaching educational effect of such institutions upon the community. This cannot be reckoned in figures, but that it is a great power for future good, no rational person, if he has had even small experience, can deny."

And we might well add that the experience gained in such sanatoria is of immense benefit to both medical profession and laity. I believe that both, in this state, have great reason to rejoice that by the recent munificent gift of Senator Redfield Proctor of \$150,000 to erect, equip and endow a sanatorium for the treatment of incipient tuberculosis, Vermont has been placed in the front rank in the endeavor now being made to stamp out the "Great White Plague." We trust that wealthy men in other states may follow this most worthy example until every state in this broad land of ours shall have at least one well regulated sanatorium for the treatment of tuberculosis.

While my paper is already much too lengthy, I must ask your further indulgence while I read a Paris dispatch regarding the latest cure for tuberculosis, announced by Dr. Behring at the International Tuberculosis Congress last week. He was at first quoted as saying, under date of October 8, 1905: "My cure is not a serum or vaccine, it is not only preventive but curative, and I solemnly avow my entire conviction in the thoroughness and finality of this cure, which is the culminating point of many years of labor. Before another year has passed the world will be in possession of a secret which will speedily rid it of one of the greatest of plagues." In a later dispatch Dr. Behring states: "The exact facts are that I have been studying for a long time a new method of treating tuberculosis, and think I have broken fresh ground. There are certain animals which contract this malady with great facility, and have hitherto proved refractory to all attempts at vaccination. I have finally succeeded in rendering them immune as regards the bacillus, and probably can even cure them when the disease is fully developed in them. Experiments on mankind have not yet been made, but there is ground for hope in this respect, the path I am following being totally different from those explored up to the present."

When so great a scientist as Professor Behring sees "ground for hope" and partially an-

nounces his discovery, I believe that we physicians have a right not only to hope, but that we Vermonters have great cause to rejoice, that with the Vermont State Proctor Sanatorium fully equipped to treat patients by the most approved modern methods, we can be among the very first to give the people of this state the benefit of Behring's remedy, if it shall prove the great plague destroyer and blessing to humanity we fondly trust it will.

#### DISCUSSION.

*Dr. H. D. Holton, Brattleboro:*

Mr. President and Gentlemen:—I have very little to say, for Dr. Campbell has covered the ground admirably. Dr. Campbell has touched very lightly, perhaps, where more emphasis might be made. We know that the busy practitioner sees a patient with a chronic disease and he is very apt to say, "You take this and come in again within a few days." Now this patient expects some benefit from that medicine. He does not get any effect from it and consequently the case goes to somebody else. Now if we had been honest with ourselves, and honest with our patient, we would have said: "My dear sir, I really haven't the time to examine your case carefully to-day. I want to give you a thorough examination and if you will come in to-morrow I will take the time and will make a thorough examination." I have made this mistake myself, and have no doubt many of you have also. I don't believe a man or a woman ever applies to a physician where there isn't some trouble. We may say she is a nervous woman. She is hysterical. We do not get at the cause. I want to emphasize the point of making a thorough examination of each case. Let us be sure of our ground before we give an opinion or prescription. With regard to early diagnosis of tubercular troubles, it is of the very gravest importance that this disease be diagnosed early. I don't know what the trouble is in this state, but probably not any more here than anywhere else. I learned from Dr. Briggs that cases are reported in New York very much better than they are in this state. The number of cases reported in this state is less than the number of deaths. I can account for this difference, for the deaths have to be reported to the health officer in order to obtain a burial permit; then it comes to the town clerk and then to the office of the State Board of Health, and so we are able to determine how many deaths occur from this disease. What is the trouble in notifying patients of their condition? Now I get communications like this: "John Jones has tuberculosis, please do not send him any more literature, but send it to me. We do not want him to know of it. Attending physician." Now I would say to John Jones, you are quite a sick man and your trouble might lead to tuberculosis unless you are benefited by some means sooner or later. Then I add, if you do have tuberculosis, it is curable, but you have got to follow some rules regarding your living, diet, etc. With this placed before your patient firmly, it is not a matter of choice, but it is a matter which they have to work for. We lay out rules and regulations regarding diet. One of the first symptoms of tuberculosis is a diminished appetite. The patient does not care to eat and does not seem to want to eat anything. You ask, "Aren't you hungry?" and your patient says: "Well, I just don't feel like taking it. I don't want it." You ask, "How much flesh have you lost within the last few months?"

"Oh, ten pounds." "Do you cough?" "No." "Don't you cough any in the morning?" "Perhaps a little, but not enough to amount to anything." That is often the beginning of a tuberculous trouble. We don't find any tubercle bacilli in the secretion from the throat, but they are there. They haven't begun to show yet. Suppose it isn't tuberculosis. How much harm is it going to do them? Advise plenty of fresh air, plenty of it in their sleeping rooms, and plenty of it during the day. A person who has a slight rising temperature, perhaps only a half degree, we know there is something wrong with them, and if they come in after a little exercise exhausted, we may know there is something wrong. Now regarding diet—give them something to aid digestion. We have no specific for tuberculosis and we must do the best we can for each organ in the body. If he needs something to help along the digestion of food, give him that. If he is growing anemic, he needs iron, and give him an iron medicine. If his appetite seems to be affected, give him some bitters; but above all, don't encourage the use of alcohol at all. Some people go and take peruna and they say they feel much better. Now the Commissioner of Internal Revenue is doing a good thing along this line of patent medicines. He has lately rendered a decision whereby anything containing a certain percentage of alcohol should be placed on the tax list and whoever sells it should have a certificate that he has the right to sell. That is going to do more for the people than any law that has been effected lately. The people say after taking peruna, they feel better, but in the end they are going to feel worse. A short time ago a woman came into my office and said: "I don't know what the trouble is, only I am nervous. The other doctor said there was nothing ailed me. Please give me something to brace up." I knew there was something wrong, so I made a careful examination. Now when you have a correct diagnosis made, you are two-thirds of the way towards curing your patient. Just remember what I said in the beginning; take time to make a thorough examination of your patient; if you haven't the time to-day, do it to-morrow, but above all things don't guess at the diagnosis.

*Dr. W. C. Abbott, Chicago, Ill.:*

Some of us don't like Osler. Osler is a pessimist. Osler has told us that 110% of every body has tuberculosis. We don't believe it. Osler has told us that from 60 to 75% of all cases of pneumonia must succumb. We don't believe it. Osler has told us, or is reported to say, that a man sixty years of age should be chloroformed, and we don't believe that either; consequently we have no particular use for Osler. When we have a patient with a marked digression from the normal state, what to do to meet the condition and bring him back to normal is far more important than absolute diagnosis. What does that mean? It means jugulation of disease; disease arrested in its incipency before explosion occurs, or organic lesion takes place. Don't misunderstand me, please, that I would decry accuracy in diagnosis. For heaven's sake be as accurate as you can, but don't wait for an accurate diagnosis before you do something for your patient. Study. Know some few, simple things than you can do and apply them. Do it quick, and do it right. The majority of cases of tuberculosis can be cured, but they have to be cured before you or I, or any average medical man, can hold up his hand and say "that man had tuberculosis." Get the confidence of the public, and say, "I think he has tuberculosis. These are the symptoms which lead me to think so, therefore such measures as may be properly used to support and reinforce his vital powers will bring him back to the normal, will make him well." All honor to the man who says, I think so and so. All honor to the man

who can change an abnormality to a normality. This waiting until you have to say (because the patient knows you have been lying to her), "You have tuberculosis," is a sin against yourself and humanity. It is of first importance in the proper relation of the physician and the public that he has its confidence, and in no way can he get it so quickly as by giving his own. Having established this, then, properly encouraged, the people will come to the doctor early; and if we can get at them early the aborting of most acute disease is easy, when the actual diagnosis need not be, and in many cases cannot be, made. To be able to do this, to win the confidence that will permit and the ability that will do, is a personal problem which each must solve for himself.

*Dr. C. F. Camp, Barre:* Just a word in regard to the distribution of knowledge to the patient suffering with tuberculosis from the Tuberculosis Commissions and the State Board of Health. A member of this Commission delivered an address in our town in which he instructed the people there in many ways that were calculated to make the physician lose his equilibrium. I never heard such teaching before and I hope never to again. Whatever those words might be that he delivered, it is the impression you give that counts, and to-day you can go into the town of ten hundred inhabitants with twenty-five consumptives who are in great danger, and they will all tell you that Dr. So and So said there was no need of going to a physician; that by reading the literature which they sent out, you will know how to treat yourself. You can go to any drug store and procure a sputum can and spit in it and send it to the Laboratory of Hygiene and you get your own report and know just how bad off you are. Now, what are you going to do? Under these strenuous circumstances we should get out the hammer, and that right early. We should knock the heads of those teachers and that right soon. It is well to report these things as they come up, and I have felt very sorry that I haven't reported this condition before. This sort of teaching is a curse. It has been intimated at in other places, I am told. If you care to go to our town, any of you gentlemen here, you will see that these things are just as I have related them. I think this sort of business is all wrong. I think when a patient has the least trouble of a tubercular nature way down to the signing of the death certificate, all the care of this patient should come under the direction of the physician. The physician should have sole charge of his patient. Now as to the use of alcohol. I have practiced medicine for twenty-five years. I haven't used twenty-five pints of whiskey in all my practice. I don't believe a tubercular patient can stand it. I don't believe there is a physician here in this room who can show me a case that has been even improved—or benefited in any way—by the use of alcohol.

*Dr. S. E. Darling, Hardwick:* I am very sorry indeed that the impression has gone out that patients suffering from tuberculosis should not consult a physician. It certainly is very important that they should be constantly under the care of the physician. It has been said by some that if fresh air, night and day, raw eggs, plenty of milk and out-door exercise, etc., was all that was necessary to cure tubercular patients, there was no necessity of consulting a physician and the party could doctor at home as well. That is not all. A patient suffering from tuberculosis should be under the charge of a physician for several reasons. First, to ascertain whether he has a rise of temperature or not. If a rise of temperature, he should rest and be kept quiet until it becomes normal. The physician alone can not accomplish everything; the patient must co-operate. The will-power and the endurance of the patient are sub-



jected to an extraordinary test, which he will hardly be able to withstand unless he realizes that his life is at stake. The most noticeable effect of consumption is the progressive emaciation, so our first aim must be to stay the increased metabolism, to make good the pressing deficit, and by a heightened nutrition to cover the loss which has already occurred. So we must know whether the food the patient is taking into his stomach is doing him the proper amount of good; whether his stomach is in a condition to absorb and digest the food he is recommended to take. For one, I am very sorry that any such impression as has been related here this morning, has gone forward, for every person suffering with tuberculosis should be under the strictest inspection of a physician.

*Dr. W. N. Bryant, Ludlow:* I promised my wife and myself that I would not say a word about tuberculosis at this meeting, but I can't let such a statement go by without saying a word upon the matter and correct the wrong impression expressed. I wish to say that I was not at Barre, but Dr. Grout was there, and whatever he said or whatever he did not say, I know he did not say what our friend here has given us the impression that he had said. I know it must be just the opposite, and if Dr. Grout was here to-day he would need no words from me to defend himself. I only wish to say that this statement cannot go forward carrying with it this impression, for Dr. Grout has always said that a patient should come under the supervision of a physician as soon as he has shown the least signs of tubercular nature.

*Dr. E. R. Campbell:* I want to endorse what my friend Dr. Bryant has just said. I have known Dr. Grout for a long, long time, and I have heard him speak a great many times, and if he created any such impression at Barre as has been related just now, certainly some one must have misunderstood him. He has always said that a tubercular case should come under the direction and care of a physician as early as possible. He might have said fresh air, exercise, eggs, rest from heavy labors, etc., were some of the essentials, some of the necessities, but if he intimated that a patient could take care of himself when suffering from tuberculosis, my friend here was surely inaccurately informed. Take such literature as would say that patients suffering from tuberculosis were incurable, and that most of them die, run down rapidly, etc., I would say, and say it emphatically—don't send such literature. But if the literature says that with the modern treatment of tuberculosis, patients are curable and a large per cent. of them taken in time, and even cases far advanced, are very much benefited by the physician. Let the Boards of Health and State Commissions send out such literature direct to the patient.

## ANESTHESIA FROM MORPHINE AND SCOPOLAMINE.

*By T. J. Farnsworth, M. D., of Clinton, Iowa.*

"History repeats itself," is as true in medicine as in politics, but still more trite is "Nothing new under the sun." Dental and obstetric instruments are shown you in temples dug up at Pompeii. Older yet is the account from the papyrus of Egypt of an anesthetic or insensibility from a germ and a plant, or an infusion

of the "poppy and mandrake," a specie of bel-ladonna, possibly of scopolia, from which comes atropine and scopolamine, kindred or identical drugs. Now the rediscovery comes of safe insensibility from morphine and scopolamine in surgical cases.

There is a tradition in my family that a great grandfather came out of the old war with a bullet in his shoulder, that became troublesome. A surgeon that was captured with Burgoyne gave him some infusion that threw him into a profound slumber, and painlessly removed it. The sleep lasted for a day and recovery was very complete. The medicine was opium and some roots he infused (mandrake?). Some cases in practice confirm me in this old method and the safety and certainty of the rediscovery.

Several years ago a young doctor came to me for help in a case of accidental opium poisoning. I found his patient a young married woman in a most profound coma, from which with all his efforts he was unable to arouse her. This was in the forenoon and she had been in this condition since six o'clock of the previous day. Her breathing was full and regular, as also was her pulse, skin moist, pupils fully dilated. I advised him to let her rest and inquired about the history. He said he was called in the forenoon of the day before to give her something for a spasmodic pain in her stomach, which came on in paroxysm. Finding the pulse regular and no fever, he concluded it was a transient colic and gave her from his case an eighth grain of morphine, and left two more powders if the pain returned. At noon he was told that the powders had not relieved the pain. Being in a hurry to visit another patient, he made up four powders, rather larger and added, with his penknife, a little atropia from his bottle. At eight o'clock he was called and she was sleeping very quietly, but could not be roused. She had taken all the powders he had dealt out for her, possibly, he acknowledged, three grains of morphine and an indefinite amount of atropia. Putting my hand into the bed to examine the abdomen, I found a full time fetus, and the placenta nicely delivered, and not much clot from hemorrhage. The child had not breathed and had been born some hours. The patient was put in a comfortable position and let alone. No alarming change took place until sometime in the evening, when she was roused up and awakened as from a natural sleep. It was with some difficulty that we persuaded her

that she had been in profound stupor over 30 hours and had passed her period of labor, and that there was any necessity for remaining in bed. In fact she staid in bed but a day or two. I have no doubt that the baby, with proper attention, would have lived.

In another case a woman was given a "placebo" prescription for pills of extract of gentian. By mistake they were made of extract of belladonna. She took two of them, six grains. She began to feel very strange; her head was light and everything in sight was distorted. She went to her drawer and took out a paper containing morphine, taking a large pinch. Soon she was in a profound coma. It was an hour before I reached her. She was resting comfortably; skin red and dry, pulse full, breathing rather hurried, pupils widely dilated. Considering that the drugs were pretty fully absorbed and no chance to remove any portion, she was left to sleep it out. The stupor lasted 24 hours, then recovery was complete, with no languor or depression following.

In another case morphine had been taken with suicidal intent, in an unknown quantity. The pulse was full and the interrupted respiration set in, a few inspirations, then a long wait until the lips became purple. I immediately injected hypodermically 1-60 grain of atropia. In a few minutes the respirations became regular; the pupils from a pin-point size began to dilate. After 15 minutes I gave another hypodermic of half the size of the first (1-120). In about 30 minutes the pupils became dilated fully and the sleep easy. Nothing further was done. The coma lasted 12 hours, when the patient roused up, asking if this was the other world she had come to.

From these and some less alarming cases, I have no doubt of the antagonism of opium and belladonna, and the little danger from the long coma produced. I would hardly care to use it in midwifery when chloroform was accessible, yet in the way recommended in the modern method of using morphine and scopolamine it might serve a good purpose in a bad case. In some cases of difficult surgery it may be resorted to with less peril than from ordinary anesthetics, much preferable, it seems, than the injection of cocaine into the spinal cord, which makes one shudder. In one case of overdose of chloral, an injection of atropia seemed to rectify the respiration and save the patient.

## INOPERABLE CASE OF CANCER OF THE UTERUS GREATLY BENEFITTED BY PALLIATIVE OPERATION.

*By A. Laphorn Smith, M. D., M. R. C. S. Eng., of Montreal; Surgeon-in-Chief of the Samaritan Hospital for Women and Gynecologist to the Western General Hospital, Montreal.*

The following case was sent to me by Dr. Potter of Island Pond, Vt.: Mrs. X, 54 years of age, born in Canada but living for many years in Vermont, was married twice and the mother of six children by her first husband, five of whom are living and one having died of consumption. Her first husband died of pneumonia. She began to menstruate at thirteen and it continued normal till her marriage at sixteen. Her third labor was a hard one with instruments, which were applied after two days' pain. She remained a widow for six years before marrying again, and she has had no children by this husband. The menopause came on two years ago, when she was fifty-two years old. Ever since that time there has been a slight show, but during the last three months there has been decided bleeding whenever she has had intercourse. Both Dr. Potter, and Dr. Norcross, who was called in consultation, advised her to come to Montreal for operation. On examination I found the cervix very hard, the uterus fixed and the left broad ligament full. This condition, combined with the history of a woman having hemorrhages two years after the menopause and so late as fifty-two years of age, convinced me that the condition was cancer, and that if it was too far advanced for total extirpation of the uterus, I could at least curette and cauterize. On Oct. 30 I proceeded to operate, but on catching the cervix with the bullet forceps to draw it down while I was feeling Douglas cul de sac with my finger, the latter suddenly went through into the peritoneal cavity and a piece of omentum came down. I then found that the whole cervix, except the vaginal portion, had been eaten away up to the internal os and that the left broad ligament was a solid cartilaginous mass. I removed the cervix with scissors and curetted away a large part of the ligament until



I got down to sound tissue. I then cauterized the raw surfaces and disinfected with bichloride. There was one spot rather high up which was oozing too much and I put a clamp on it for two days.

Shortly after this palliative operation the patient claimed that she felt better than she had done for many months. The simple reason for that was that by curetting away all sloughing tissues a stop was put to the septic absorption which had been going on. Her appetite and strength returned and in ten days she went home. Before leaving the hospital she asked me to tell her frankly what was the nature of her disease and I told her it was cancer and that it was impossible to remove it all. She appeared quite resigned to her fate. Three months afterward she was feeling so well that she and her friends had come to the conclusion that I must have been mistaken in my diagnosis, because if she had had cancer she would not have improved so much. I had a letter from her doctor to that effect, to which I replied that I had done the same operation for a woman from Concord, N. H., who was in a more advanced stage still, and yet who lived for over a year without any discomfort, gaining in weight and color. I think we are too ready to give up all hope of being able to do any real good for these patients as soon as we make the diagnosis. I have seen many of these patients made very comfortable and their lives prolonged to over two years by curetting once or even every few months. By getting rid of the acrid discharge and the bleeding and the septic absorption, we really do a great deal for these poor doomed ones, and next to diagnosing the disease early enough to do total hysterectomy, the treatment I am advocating is the very best we can do.

248 Bishop Street.

**INSOMNIA OF CEREBRAL ANEMIA.**—Caille states that patients with this form of insomnia usually sleep well at first, but wake up and cannot go to sleep again. Stimulants are indicated, and the bowels should move regularly. Beer, whiskey or 1-60 grain of strychnin at bed time does well. On waking, let the patient get up and eat some light food or take a little whiskey, walk around, or apply hot and cold water to the back. Inhalations of equal parts of ether, alcohol and cologne on a handkerchief before going to bed may help in this class of cases.—*Denver Medical Times*.

**INSOMNIA IN TUBERCULAR PATIENTS.**—This symptom may depend on cough, fever, nervousness or digestive troubles. Knopf states that the last meal before retiring should be light and very digestible—buttermilk, kephir and koumiss are good. Avoid tea and coffee. Remain out of doors as much as possible, with moderate physical exercise. Have regular hours of retiring and rising; absolute quiet about bed-room, with the temperature in winter at 60° F. Sleep with as low a head-rest as possible. Use a wet pack and bathe face with cool water or lightly sponge whole body; vigorous friction of feet with rough towel soaked in cold water; downward effleurage of spine. Use morphin hypodermically or chloral as a last resort.—*Denver Medical Times*.

Magnesium sulphate anesthesia was recently advocated by Dr. S. J. Meltzer in an able paper read before the New York Academy of Medicine. This method is of special interest, following as it does upon the advocacy of the use of scopolamine to the same end. As every physician has had frequent occasion to realize, no method of causive insensibility to pain is free from objection, though now we have a number of them—ether, chloroform, nitrous oxide, lumbar puncture, scopolamine and magnesium sulphate. Concerning the last of these Dr. Meltzer himself bids us be cautious. It tends to check respiration; wherefore apparatus for mechanically exciting the action of the lungs should be provided in advance. The salt is used subcutaneously.

The chief indications for treatment of acute post-operative abdominal conditions are cardiac failure and collapse, loss of fluid from the tissues, toxemia, tendency to paralysis of the gut, pain, and the condition of the mouth. Cardiac failure is best combatted with strychnin. For the loss of fluid and toxemia, subcutaneous and intravenous injections are given. For the tendency to paralysis of the gut the hourly administration of one-grain doses of calomel, assisted after a few hours by enemata, is advised. Pain rarely calls for the use of morphine. For the dryness of the mouth the patient should rinse the same with hot water and the nurse should swab it out with an antiseptic mouthwash.—J. H. Bryant, *The Clinical Journal*.

## Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the Medical Sciences.*

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### EDITORIAL.

Seventeen years ago the first national pure food bill was introduced into the United States Senate and nearly every year since then such a bill has met its doom before that body. On February 21st of this year a pure food bill, known as the Hepburn bill, passed the Senate with only four dissenting votes and has since then been before the House. If this becomes a law it will supplement the regulations on this subject at present existent in most of the states and in regulating interstate traffice it will cover a phase of the problem which is beyond the jurisdiction of these state laws. Furthermore in defining standards, it will probably effect greater uniformity in the several states, as undoubtedly state laws will be arranged to conform with the government standards. The original bill has been weakened somewhat by taking the final responsibility of determining these standards from the Secretary of Agriculture and delegating it to a Board of Experts appointed by him.

While the pure food question is largely an economic one, there are some points which are of medical interest. The use of preservatives and aniline colors has been discussed at great length and is far from a satisfactory settlement. Whatever the truth of the matter may be, it is certainly right that the consumer know when he is eating preserved foods. The bill defines the adulteration and misbranding of drugs as follows: "If when a drug is sold under the standard recognized in the United States Pharmacopeia or National Formulary, it differs from the standard of strength as determined by the test laid down in the United States Pharmacopeia or National Formulary official at the time of the investigation." \* \* \* "If its strength or purity differ from any other professed standard or quality under which it is sold." \* \* \* "If it be an imitation of or offered for sale under the name of another article." \* \* \* "If the contents of the original package shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any alcohol therein or of any opium, cocain, or other poisonous substance which may be contained therein," it shall be "deemed to be adulterated."

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Massachusetts is going one better in the line of medical legislation, and now has a bill pending for the suppression of immoral advertising which provides for the prohibition of all advertisements or circulars calling attention to sexual diseases or infirmities. At a recent hearing before the judiciary committee, Dr. Richard C. Cabot advocated the bill, claiming that these advertisements tend to create disease rather than cure it, that the methods of treatment tend to make criminal operations easy, and that such advertisers intentionally defraud their patients. In defense, the lawyer hired by these "special-



ists" prates of "false modesty" and of "people who want to put a shirt waist on the Venus of Praxiteles and drape their piano legs"—a line of defense which might be expected from such a source. If the bill becomes a law, as it certainly should, it will be a credit to the old Bay State, and an example which might well be widely imitated.

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The coming report of the State Board of Health will contain a table showing the relation of bacteriological diagnosis of throat affections to the primary diagnosis made by the attending physicians. The table includes the records of 5,953 cases, of which 2,560 were bacteriologically diphtheria and 3,393 failed to show the Klebs-Loeffler bacillus. In nearly half of these cases the attending physician refused to venture a diagnosis. Of the positive cases which were diagnosed previous to a bacteriological examination, 17% were called tonsillitis and 52% of the cases which did not show diphtheria bacillus were diagnosed from clinical symptoms as diphtheria. These figures emphasize the impossibility of making a correct diagnosis early in cases of angina from the clinical symptoms alone. It needs no pen picture to suggest the disastrous results which would have followed if these infectious cases had been allowed to roam at large. On the other hand, the loss which would have followed the unnecessary isolation of 984 cases of benign sore throat is of much economic importance. These tables show further that the average duration of the diphtheria bacillus in the throat was seventeen days, with a minimum of one and a maximum of sixty-three days.

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Every month we note the death of old-time physicians, members of the former generation who were leaders in their day, but who gradually gave place to younger men, and finally left this world for the sphere of higher activity.

In the midst of sickness and death throughout his active days, the physicial seldom stops to think that he too must in time become the prey of the destroyer of health and eventually join his ancestors in the great majority. Yet he, too, at last succumbs, the victim of the monster he has spent his life in fighting. The medical man in active practice is a wonderful combination of energy, enthusiasm, patience and endurance. Always on the *qui vive* to allay human suffering, always at the call of the one in distress, often spending the night hours in struggles with death, patiently bearing the tremendous responsibilities of the obstetrician, safely keeping the secrets which if even breathed would destroy the happiness of families—this is the life of the physician, and should not the world bow the head in reverence when such men as these pass on to their reward?

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## NEWS AND PERSONAL ITEMS.

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*We desire to make this column of personal interest to all.  
Physicians are requested to send news items.*

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### VERMONT.

Dr. and Mrs. C. A. Cramton of St. Johnsbury are taking a winter vacation in Jamaica.

Dr. C. F. Gale of Wolcott, who has been in New York, has returned and resumed his practice.

Dr. Cassius W. Brooks, a former resident of Montpelier, died recently at Enterprise, Kans.

Dr. J. F. Shattuck of Wells River, who has been ill for some time, is sufficiently recovered to resume part of his practice.

Dr. A. G. Brush, a long time resident and physician of Fairfax, died March 26, having just passed his 87th birthday.

Dr. S. E. Maynard of Burlington is in the West doing some work at the hospitals of Chicago, and attending the Mayo clinic at Rochester, Minn.

Dr. George F. Hubbell and Mrs. Delia Hanlon were married at Northfield, March 29, by Rev. Homer White of Randolph. After a wedding journey, they will reside in Northfield.

Dr. J. L. Perkins of St. Johnsbury, who died March 19, was a graduate of the Medical Department of the University of Vermont, and previous to entering the practice of dentistry served in the civil war, participating in several important engagements.

The University Research Club of Burlington held a meeting at the Williams Science Building, April 9. Dr. H. F. Perkins read a paper on "Investigations at a Marine Biological Laboratory," illustrated with lantern slides. At the previous meeting, Dr. F. K. Jackson read a paper on "Muscle," with a demonstration of physiological apparatus, and Dr. J. N. Jenne gave a talk on some changes in the new Pharmacopoeia.

Owing to the large number of visitors, the Mary Fletcher Hospital at Burlington has been obliged to modify the rules regarding the admission of friends and relatives of patients. The visiting hours are now from 2 to 4 o'clock every afternoon, including Sundays, and except at the discretion of the superintendent, visitors will not be admitted at other hours. No tickets of admission to the hospital will hereafter be given by the directors.

Dr. G. E. E. Sparhawk, one of the oldest physicians in Vermont, and a pioneer in homoeopathy, died at his home in Burlington, March 14, aged 77 years. He first studied medicine with Dr. Gibson of Sharon and later graduated from the Vermont Medical College at Woodstock. He then went to Philadelphia and was graduated from the Hahnemann Homeopathic Medical College in 1853. After practicing in West Randolph and Gaysville, he came to Burlington in 1878 and a few years later opened the private sanitarium which bears his name, retaining the conduct of the institution until seven years ago, when his son, Dr. Sam Sparhawk, assumed control. Dr. Sparhawk was at first the only homeopathic physician in Vermont, and has been a leader in the organizations and societies of the school throughout his active life.

The death of Dr. Benjamin Walter Carpenter, president of the Alumni Association of the University of Vermont College of Medicine,

occurred March 20, at his home in Burlington. Dr. Carpenter was one of the early graduates of the medical college, receiving his degree in 1857, and practiced his profession until 1861, when he was appointed assistant surgeon of the Second Vermont Regiment. The following year he was made surgeon and later became chief medical officer on the staff of Col. George J. Stannard. During his army career he was an active participant in many battles and campaigns and won many honors for distinguished service, besides endearing himself to the men who were in his care. Upon returning from the war, Dr. Carpenter again resumed medical practice, but not extensively, and in the early 70's went into the drug business. From this he retired about 15 years ago and has since lived quietly, with strength gradually diminishing. Dr. Carpenter was the son of Dr. Walter Carpenter, one of the pioneers in medical education in Vermont, and an eminent practitioner of Burlington.

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#### MAINE.

Dr. George H. Turner, Jr., of Portland has been appointed surgeon of the Maine Naval Reserves.

Dr. F. F. Innis, an old resident of Houlton, died March 22, after a short illness, being 73 years of age.

The marriage of Dr. Ralph M. Whitney of South Windham and Miss Mildred L. Stevens of Westbrook occurred April 4.

Dr. Charles Burnham Perkins died of paralysis, March 7, at his home in Portland. He was aged 85 years. Dr. Perkins was one of the old school physicians, liberally educated and highly successful in his practice. The greater part of his life while engaged in his profession was spent in the town of Phippsburg and at Parker's Head. He retired from practice at the age of 50 years.

The annual meeting of the State Board of Health was held at the State House, April 2, and Dr. C. D. Smith of Portland was elected president. Dr. M. L. Young of Vanceboro reported on inspection work at that port of entry. It is complained that the local authorities in some parts of New Brunswick fail to do trustworthy work, and the inconvenience which the Maine inspection service has unavoidably caused has been, as the board regards it, much



more prolonged than would be necessary if the infected houses around Fredericton Junction had been promptly disinfected and in a proper manner.

### NEW HAMPSHIRE.

The semi-annual meeting of the New Hampshire Surgical Club was held at Nashua, March 22. About 50 members were in attendance. Papers were read by Dr. A. W. Mitchell of Concord, Dr. J. M. Gile of Manchester and Dr. E. F. McQuesten of Nashua.

Nurses representing all the cities and many of the towns of the state held a meeting at Concord, April 2, to take action toward forming a state organization. The object is to secure legislation which shall compel the registration of all nurses. A meeting will be held in May, when permanent officers will be elected.

The graduating exercises of Dartmouth Medical School were held March 30, when ten men received the degree of Doctor of Medicine. The address was given by Dr. Ira J. Prouty of Keene. The class is composed as follows: John W. Bowler, Hanover; Hamlin P. Bennett, Farmington, N. H.; Edward A. Bullard, Cambridge, Mass.; Charles B. Chidel, Randolph, Vt.; Willis P. Craig, Marlow, N. H.; Irvin H. Farr, Holyoke, Mass.; George H. Foss, Pittsfield, Mass.; Park R. Hoyt, Lakeport, N. H.; Roy W. Mathes, Durham, N. H.; Carl C. McCorison, North Berwick, Me.

### MASSACHUSETTS.

The Connecticut Valley Alumni Association of the University of Vermont College of Medicine held its second annual banquet recently in Springfield. A committee consisting of Drs. W. A. Smith and V. J. Irwin of Springfield, N. P. Wood of Northfield, J. C. O'Brien of Greenfield, and C. W. Street of Suffield, Conn., was appointed to perfect the organization of the association. The officers elected were: Drs. W. A. Smith, president; J. C. Downey, vice-president; V. J. Irwin, secretary and treasurer. The chief speaker was Dr. A. P. Grinnell of New York city, formerly dean of the medical college. Other speakers were Drs. E. B. Nims of Springfield, J. C. O'Brien, N. P. Wood, V. J. Irwin, J. N. Fay of Northampton, and H. D. Holton of Brattleboro. About 25 Massachusetts physicians were present.

## AN EPITOME OF CURRENT MEDICAL LITERATURE.

### MEDICINE.

#### NERVOUS DYSPESIA.

HOWELL T. PERSHING (*Colorado Medicine*, March, '06), emphasizes the fact that in true nervous dyspepsia the origin of the disease is not in errors of diet or the digestive organs at all, but in exhaustion of the brain, therefore systems of diet and remedies directly addressed to the digestive organs are futile unless the nervous system is at the same time rested, soothed and strengthened. The prevailing method of treatment, the rules of diet, the remedies for indigestion, the use of the stomach pump and the self-observation involved add to the patient's load of anxiety, suggest and develop new symptoms and increase the symptoms of indigestion, thus giving a false confirmation to a wrong diagnosis. In making the diagnosis, methods tending to alarm the patient should be avoided. A careful inquiry as to previous illness and as to the onset of the present symptoms will reveal the neurotic predisposition, the origin of the disease in mental stress and the other signs of neurasthenia. Organic disease of the digestive organs can be excluded by the history, together with such physical examination as will neither distress nor alarm the patient. Diagnosis having been made, we should fix in mind the one absolutely essential object of treatment: that the tired brain must be rested, soothed, invigorated and restored to its equilibrium. It is a problem in applied psychology. The patient must be taught serenity, repose, relaxation, courage. As to diet, only the grosser errors should be corrected. In general, meats, eggs, fish and poultry are most desirable, while breadstuffs, potatoes, vegetables and fruit may well be moderately restricted. The most essential thing is that the patient should eat a generous quantity of food without fear. Let him be assured that even if he does occasionally overeat or partake of some food that is really unwholesome, the bad results will be temporary and altogether unimportant in comparison with better nutrition. Medical treatment, the writer considers of subordinate importance, but suggests the following given in capsules three times a day:

Strych. sulph. ....	gr. 1-30
Aloini .....	gr. 1-20
Ext. Cannabis Ind.....	gr. 1-12
Codeinae .....	gr. 1-5
Saloli .....	gr. v

If the case is complicated with the uric acid diathesis sodium salicylate in five grain tablets three times a day is recommended. It should be taken immediately before meals and washed down with water.

#### THE CHRONIC DYSPETIC.

MARK T. KNAPP (*Am. Medicine*, March, '06) considers chronic dyspepsia to be caused by either organacida gastrica, organacida enterica or by insufficiency pylori, or a combination of these. The common "nervous" dyspepsia is due, he maintains, to the presence within the stomach of organic acids to an abnormally large degree, organacida gastrica. This is the most prevalent disease of the stomach, afflicting the young mostly, but not confined to any age. This disease he divides according to etiology into organica gastrica simplex, an acute form with symptoms complex produced by the ingestion of large quantities of organic acids, either as such or in

fruit or salads; gastroia fungosa, in which the relatively large contents of organic acid is the result of a mould growth in the stomach; and zymosia gastrica, in which the organic acids are produced by the growth of a yeast. The organic acid of the gastroia fungosa is succinic acid; the acids of the zymosia are acetic and butyric. These acids are volatile and extremely irritating to mucus membranes and may pass the cardiac and exert their irritating effects on the mucus membranes of the throat, nose, frontal sinus eustachian tubes, frontal cells, etc., as well as the stomach. The vomiting regurgitation and water brash accompanying the disease are due to muscular contraction produced by irritation of the mucus membrane of the stomach. Insufficiency pylori, the author calls that condition in which one hour after the ingestion of an Ewald test meal not more than 2 c. c. of contents can be aspirated from the stomach. The condition is due to a gradual weakening of the pyloric sphincter, resulting no doubt from a previously inflamed condition of the pylorus. The third cause of chronic dyspepsia, organacida enterica, is capable of subdivision in the same manner as organacida gastrica. It is the usual accompaniment of insufficiency pylori. Its symptoms are caused by distension and irritation. The irritation causes muscular contraction. When the irritating matter reaches a sphincter it causes spastic contraction and pain. It is, the author maintains, this painful, spastic contraction of the ileocolic valve which is often being mistaken for appendicitis.

#### WHAT CONSTITUTES PNEUMONIA.

ANDREW H. SMITH (*Med. Record, Feb. 3, '06*) in an article on "What Constitutes Pneumonia," emphasizes the significance of the pavement epithelium of the air cells in relation to the growth of the pneumococcus. When a living pneumococcus finds its way beyond the columnar epithelium of the tubes and lodges on the pavement cells of the infundibulum or air cells, causing there its specific irritation and consequent exudation, the author maintains we have all the essentials of the disease. Attention is also called to the double circulation in the lungs and the fact that while the capillaries derived from the pulmonary arteries in the affected part may be completely occluded for many days, those from the bronchial arteries are scarcely implicated and the nutrition remains intact. It is the double circulation that saves the lung tissues from gangrene.

#### DEFINITION OF INSANITY.

WILLIAM A. WHITE (*N. Y. Med. Journal, Feb. 24, '06*) defines insanity as follows: "Insanity is a disorder of the mind due to disease of the brain manifesting itself by a more or less prolonged departure from the individual's usual manner of thinking, feeling and acting and resulting in a lessened capacity for adaptation to the environments." The author lays no claim to framing a perfect definition and emphasizes the fact that such a definition of a subject concerning which our knowledge is incomplete, is obviously impossible. He thinks, however, that this definition is somewhat more exact in its wording and its synthesis than those already in existence.

#### DETERMINATION OF REFRACTION ERRORS.

CHAS. NELSON SPRATT (*Journal of Minnesota State Medical Association, March, '06*) concludes an article on the determination of errors of refraction without cycloplegia, by means of astigmatic charts as follows:

1. With intelligent adults, subjective methods of refracting are preferable to objective methods.
2. The comparison of two lines at right angles, these corresponding to the axis of maximum and minimum refraction of the dioptric system of the eye, is a more accurate method of determining errors of refraction than by the use of test-letters.
3. Astigmatic charts, as devised by Verhoeff, are preferable to the single line charts, as the contrast produced by the cross lines enables one to estimate more accurately any difference in distinctiveness in the test lines corresponding to meridians of maximum and minimum refraction.
4. In practically all cases the astigmatism and myopia can be as accurately determined without as with cycloplegia.
5. A large proportion of cases of hypermetropia can be satisfactorily refracted without the use of cycloplegics.

#### EFFECT OF ATMOSPHERE ON RESPIRATORY TRACT.

T. A. STARKY (*Montreal Med. Monthly, March, '06*) concludes a paper on Deficient Humidity of the Atmosphere and its Effect upon the Respiratory Tract, as follows: "I will venture to put forward the statement that the condition of excessive dryness of the atmosphere in houses is a large factor in the causation of many affections of the naso-pharynx in children,—a general chronic hyperaemia of the nasal mucous membranes,—sometimes leading to adenoid growths and catarrhal conditions of the Eustachean tubes." He further suggests that the dry condition of the atmosphere, which exerts a very deleterious effect in those cases in which acute congestion of the lungs exist, may be the predisposing or causation factor of these conditions in the normal body. He is firmly of the opinion that catarrhal conditions of the mucous membranes, especially those of the respiratory and gastro-intestinal tract, are due to climatic conditions.

#### INDICANURIA.

ALFRED STENGLE (*Medical Review of Reviews, Feb. '06*) in a discussion of "Diagnosis," speaks of indicanuria as follows: A moment's reflection will show that the urine may be capable of indicating many other diseases of the body than those of the kidneys. The urine represents the excretion in some form or another of all materials which are absorbed from the gastrointestinal tract, except such as are retained or may escape from the body through the lungs and skin, and an uncertain amount probably amounting to nothing which re-enters the intestinal tract after having once left it. The power of selective absorption from the intestinal tract is a very remarkable physiologic function, and one that is liable to disturbance, which disturbance is probably the basis of many derangements of the body. It is well known that indol, phenol, and skatol are important products of decomposition in the intestinal canal, that they are always present in small amount, and are present in great excess in cases of intestinal fermentation. The group is represented by the indol, which when absorbed into the general system, appears in the urine as indican. Hence, we have in the determination of indican in the urine an index of important functions of digestion and absorption. Indicanuria is not a disease, but a condition with special indication in reference to bodily hygiene, and its successful eradication is an index of our success in the improvement of these underlying disorders. A case presenting indican in easily recognizable quantities should have the urine examined at frequent intervals in order to determine habitual rela-



tions of this substance, and then when treatment is commenced the effect of treatment should be followed in the like manner. For most clinical purposes the indol determination will stand for the group, although there may be instances where it is worth while to follow the skatol as well. Phenol, with the methods which may be fairly said to belong to clinical pathology, is not worth considering.

## THERAPEUTICS.

### CHRONIC DIARRHEA, TREATMENT OF DIFFERENT CLASSES.

MAX EINHORN (*N. Y. Med. Journal*, Feb. 10, '06), for the purposes of treatment divides chronic diarrhea into different classes as follows: (1) Diarrhea due to chronic intestinal obstruction; (2) nervous diarrhea; (3) chronic diarrhea, due to catarrh of the small intestine principally. This group he subdivides into (1) primary catarrh; (2) catarrh depending upon abnormalities of gastric secretion, and (3) catarrh accompanying ulceration. The special treatment of each class will call for a difference in the dietetic regime. In chronic intestinal obstruction, so long as the patient is not operated on and the obstruction exists, the first principle will be that the diet should be a liquid one. The liquid diet will have to be maintained because solid food will not pass through the narrowed canal. It will be vomited and will aggravate the symptoms. We may give milk, raw eggs and different kinds of broths and meat juices, but this will be all which we may allow. Variations to improve the taste, and bring more variety into the menu may be introduced, but in the main the foods will remain the same. In diarrhea of nervous origin we will have to make the patient eat almost anything. Even those foods which leave a residue do not play much part. The main treatment is that the patient should try and suppress these movements, i. e., not to run to the closet as often as he feels inclined, and besides other means, nerve sedatives. The diet should not be restricted. Food of a laxative nature, however, should be avoided; otherwise these patients can eat everything.

In the two groups, in which the diarrhea is dependent upon a gastric anomaly, the entire treatment, medicinal and dietetic, will have to be arranged to suit the stomach. In the patient with achylia gastrica we find it expedient empirically, not merely theoretically, to exclude proteids from the diet. Such patients do much better on a diet which contains little meat or no meat at all. They should live on a vegetarian diet. A vegetable diet is inclined, as a rule, to predispose to diarrhea, but in this group of cases it is just the remedy. If one keeps a patient on gruels and perhaps on nicely divided articles of food, milk kumiss, later on bread and butter and omits meat entirely for a time, we will find that in a few weeks he will not suffer so much from the diarrhea. It is not necessary to institute a rigorous diet nor to avoid meats altogether for a very long period. If we give the patient finely divided foods for a few weeks, at first liquid, then semi-liquid foods, we can then after a time begin to allow foods a little coarser, bread, vermicelli, barley, rice, and later on meat. We will find that the bowels will gradually get accustomed to these foods, even if they do not get into the intestine in so finely divided a state. These patients should masticate their food carefully. This is more important here than in any other class of stomach derangements. These patients do well on starchy foods.

Diarrhea, if due to a condition of hyperchlorhydria, will have to be managed quite differently. Here meats, a richly albuminous diet will play an important part. These patients will do well on plenty of meat and eggs, and very little starchy food—just the opposite of those suffering from achylia—and also an alkali. In the first group, achylia gastrica, it is not essential to administer hydrochloric acid, but in the second group, hyperchlorhydria, we will have to give alkalies. In the larger group of chronic diarrhea due to abnormal conditions of the small intestine, the writer is of the opinion that we should exclude all fruits, salads, highly spiced dishes, all irritating substances and cold beverages (all things which have a tendency to increase peristalsis should be carefully avoided), we should still try to give a sufficient quantity of nourishment to these patients, even if their actual condition of diarrhea should apparently grow worse through the diet.

The great danger is that if we restrict the diet of these patients too greatly we will produce a condition of subnutrition which is fatal to a cure. For this reason the author maintains that in these cases of chronic diarrhea, after having tried little or no nutrition at all for a short time, we must give plenty of food, six or eight eggs, decoctions of barley, oatmeal and rice, later on porridges, then bread and butter, and finally meals. Nourish them well, do not give fruits, salads or cold drinks or anything of an irritating nature. If the diarrhea is kept up we must have recourse to some medicinal treatment, as tannic acid or opium preparations.

### TREATMENT OF PNEUMONIA.

EGBERT LEFEVER (*Med. Record*, Feb. 24, '06), in a discussion of the Treatment of Pneumonia, calls attention to the fact that pneumonia is an acute infectious disease, with a localized inflammation of the lung of a characteristic nature, due to the presence of the pneumococcus. This local lesion is therefore not the essential cause of the symptoms, although it contributes to the seriousness of the case and adds its own peculiar danger. The toxemia of the pneumococcus infection must be considered the chief factor in causing the symptoms of the disease. The primary and essential action of the toxemia is that of stimulation. With this understanding of the pathology the indications for treatment at every stage of the disease are definite. From the very onset our efforts should be directed toward controlling the toxemia and its effects: (1) by limiting the production of the toxin in the lungs and elsewhere; (2) by antidoting it after its absorption into the blood; (3) by diminishing its amount through free elimination, and (4) by neutralizing its effect on the organism. Up to the present time we have no proven means for preventing or controlling the production or absorption of the pneumotoxin or of antidoting its action after it has been absorbed, hence our chief efforts must be directed toward the elimination of the toxin as rapidly as possible and the combating of its effects on the different organs. Saline cathartics should be used freely during the early days of the disease. Sweating should be produced by external means if the toxemia is urgent, but as these means are depressing, active diaphoresis is not indicated unless the toxemia is profound and the renal action insufficient. The free use of liquor, ammoni acetatis, citrate of potassium and hot drinks, especially hot water, are useful. The chief reliance is on elimination of the kidneys. To encourage this water should be given plentifully either per stomach, or in cases of nausea, by enemas of normal saline solution. There are two periods when venesection is indicated; early in the disease for toxemia and later when its pur-

pose is to reduce venous stasis. To combat the symptoms which are those of hyperstimulation, we should resort to cold compresses or ice bags and cold compresses over the chest. This treatment has a sedative action upon the nervous system and acts favorably upon the heart and respiratory muscles, as well as in lowering the temperature. Pain should be controlled by opium or one of its alkaloids without atropine. In some cases restlessness can be controlled by the free use of alcohol. Aconite may be used in those cases where the cardiac rate and power are out of proportion to other symptoms and are not controlled by the ice bag and cold pack. All this time we must be on the watch for symptoms of weakness, which call for a change in the treatment. Against the loss of vasomotor control the author advises two classes of stimulants: (1) those acting upon medullary centres, strychnine, caffeine, atropine and cocaine, and (2) those acting on the muscular tissue of the arterial system—digitalis, ergot and suprarenal extract. The peculiar indications for each of these remedies are discussed by the author.

#### MENINGITIS.

O. F. OSBORNE (*N. Y. Med. Journal*, Feb. 17, '06), discussing the treatment of meningitis, says that "Ice, ergot and morphine is the treatment that will save and has saved many patients from death from this disease." Morphine should be given to allay nerve pain and to quiet cerebral excitement and delirium. To aid the action of the morphine and prevent the necessity of larger doses ergot should be used. Physiologically it contracts the blood vessels and is, of course, indicated in cardiac weakness or with soft pulse and dilated arteries. The ergot also has a decided sedative action on the central nervous system, apparently contracting and relieving congestion in the cerebral and spinal vessels. For the best effect it should be injected deep into some muscle, preferably the deltoid. The frequency of administration depends entirely upon symptoms, but in the average case should be about once in six hours. The ice cap and the spinal ice bag are very necessary and should be used pretty constantly until temperature reaches normal. The sore throat should be treated with antiseptic gargles and the conjunctivitis with boracic acid. The general treatment of the patient should be the same as in typhoid fever. After the first few days nutrition is very important and should consist of expressed beef juice, raw eggs and milk given in sufficient quantities for positive nutrition, but not in excess lest indigestion be caused. During convalescence potassium and sodium iodide in small doses is efficient in aiding absorption of exudates. The patient should be kept in bed a week after the cessation of fever and the resumption of active duties should be postponed as long as possible.

#### GYNECOLOGY.

##### REPAIR OF THE PERINEUM.

G. B. SOMERS, San Francisco (*Journal A. M. A.*, Nov. 11, '05), criticises some of the methods recommended for the repair of the perineum as failing to restore the function of the part, which depends on the action of its muscles rather than on its bulk or the strength of its fascia. Its function, he says, depends mainly on the action of the levator ani, and the importance of this fact, he thinks, has apparently had very little influence on the technic of perineorrhaphy. If the levator is uninjured a laceration of the superficial muscles hardly needs repair. It is the levator that is at fault when the perineum

fails to do its duty, when there is rectocele or cystocele, and it is what we should seek to repair. The Reed method, he considers, is based on correct principles, and satisfactory when only a small amount of mucosa is to be removed. In most cases, however, it is desirable to remove more or less tissue on account of cicatrices, irregular sulci, etc., and he describes the following method which he calls the "fishing" operation as an easy method for exposing and uniting the levator fibers in such cases. In the first place, the edges of the levator are located by the finger in the vagina and exposed by a simple triangular denudation. The muscle is then fished out on both sides with a vulsellum or tenaculum forceps and kept under observation and control. This, Somers believes, should be the basis of every perineal repair operation, at least when there is rectocele or cystocele. The main thing is to expose and directly to unite the severed parts. The use of interrupted sutures, he thinks, is the cause of much trouble in perineal operations, and he offers the following as avoiding the chief objections to the interrupted and the buried sutures, at the same time allowing for swelling. "Silkworm gut is used. Passing through the apex of the triangular denudation the suture is inserted with a mattress stitch, from side to side, in the deepest portion of the wound. In passing by the exposed levator ani fibers (still held by vulsella) it passes through the edges of each two or three times. It then continues in the deep portion of the wound, taking up next the tissue over the denuded ends of the superficial perineal muscles. Finally, it emerges through the skin, on the perineal surface, just above the lower angle of the wound. It is then drawn taut approximating the tissues. A second and third are passed in similar fashion, each taking in a portion of the levator ani, one above the other. As each suture is drawn taut, the tissues come together, bringing the denuded surfaces in contact. The fourth suture may be submucous or a whip stitch and serves for final closure of the wound. The most important part of the suturing is the fastening of the ends: with all drawn taut, the vaginal ends are drawn into a single shot and clamped from half an inch to an inch from the surface. The perineal ends are similarly clamped at the same distance. This allows for swelling. In removing the sutures, usually on the tenth day, the shot in the vagina is seized and cut off close to the surface. The perineal ends are then grasped and the sutures pulled out. By this method of suturing, Somers claims, the perineum is built up layer by layer and the surfaces approximated evenly, without tension and without constriction of the circulation. The parts are therefore in the best possible condition for repair. The paper is illustrated.

##### CAUSES OF FAILURE OF GYNECOLOGIC OPERATIONS.

W. E. GROUND (*Journal A. M. A.*, Nov. 11, '05), discusses what he considers some of the more frequent causes of the failures of gynecologic operations to give complete relief. His observation has led him to believe that almost every woman during her confinement suffers injuries to the pelvic floor from which she does not recover, and that immediate suture of apparent lacerations does not restore pelvic support in the vast majority of cases. Only when there is full restoration of anatomic structures to their normal relations is the mischief rectified, and when this is not the case visceral ptoses and their manifold neurasthenic and other accompaniments of morbid symptoms are met. Uterine displacements are also attributed by him largely to this cause. When the uterus is infected, heavy and traumatized, and its pelvic floor support is diminished, all these conditions need to be remedied before complete relief is afforded. The perfectly healthy uterus rarely causes symptoms, whatever its position. He has seen



many cases of retroversion in young women that never produced symptoms until after pelvic floor relaxation occurred, unless infected with the gonococcus or pregnancy occurred with its consequences. Another source of failure after gynecologic operations, he says, is the so-called conservative operations on the ovaries. The vast majority of destructive lesions of the ovaries arise from uterine infection and it is very much of a question, he says, whether after a uterus once becomes thoroughly infected, it ever fully regains its normal condition. Hence, he thinks, physicians are more likely to conserve ovarian tissue by doing a supravaginal amputation of the uterus and removing the Fallopian tubes and the accompanying lymphatic trunks, than by doing conservative work on the ovaries and leaving the uterus. In cases of double salpingo-oophorectomy for septic conditions there is no question in his mind as to the propriety of also removing the uterus. Leaving a uterus, the source of infection, renders other measures of doubtful utility, and removing it permits cleaner work with fewer postoperative adhesions to cause trouble. It has been his practice for several years to remove it in these cases, and the results have been eminently satisfactory.

#### POSTOPERATIVE PELVIC EXUDATES.

W. F. B. WAKEFIELD (*Journal A. M. A.*, Nov. 25, '05) has made a study of the postoperative conditions following pelvic operations, and concludes that exudates or indurations exist, to a greater or less extent, in about 60 per cent. of the patients thus operated on. These are seldom observed until after the woman begins to take up her active duties again, and this perhaps accounts for the scantiness of the literature on the subject which he remarks. He regards these conditions as of extreme importance, and as often tending to a state of invalidism as pronounced as that existing before the operation. After operation, there is left an impaired circulation, with more or less venous stasis and edema following, and the presence of a greater or less amount of embryonic connective tissue. If now the patient, at the time when, under ordinary conditions the embryonic tissue is undergoing absorption, resumes her habitual activities, there are exactly the conditions favoring pelvic exudates and indurations. Careful observation has convinced him that these bad results can be prevented by a prolonged convalescence and a very gradual resumption of active life, aided when possible, by general hygienic and local depletory measures. In the former, he includes such measures as tend to improve the general circulation, light massage, alcohol and salt friction rubs, tepid sponge baths, etc. Local depletion at this stage consists in copious hot douches once or twice daily. If, some time after operation, pelvic induration or tumefaction exists, physical exercise must be restricted, the excretory organs, especially the skin, kept active, and local stimulating and depleting measures, the hot douche and the depleting tampon, and the local use of electricity may be beneficial. He has never found incision and drainage necessary.

#### ENDOMETRITIS.

E. F. TUCKER (*Journal A. M. A.*, Nov. 11, '05) remarks that in six text-books he finds 27 varieties of endometritis described, no single one of which is found in all six. This ought to be discouraging to the student did these varieties really all exist. Tucker states that the endometrium is a tissue, the main function of which is undoubtedly connected with the development of the fertilized ovum, and its pathology is limited. He quotes from Emmett and

Howard Kelly as to the rarity and limitations of endometritis, and says that a true endometritis can only exist as a result of a direct irritant to the structure of the endometrium, either microbic or otherwise, and such is rare. The endometrium may be affected by conditions affecting the uterus, but this does not represent a diseased condition by itself. The only successful treatment is removal of the cause when this can be discovered and local measures directed to the endometrium alone will be of little avail. He does not believe in a gonorrheal condition of the endometrium proper, apart from the cervix, though he says this is a disputed point.

#### DANGER SIGNALS IN THE URINE.\*

In speaking on this subject, William Henry Porter calls attention to three important points in connection with the study of the urine which indicates disturbances in metabolism rather than organic changes in the histological structure of the animal economy. The three conditions are the presence of indican, uric acid in excess of normal and the presence of oxalic acid as expressed by the oxalates. The antecedent of indican, indol ( $C_8H_7N$ ), is produced in the alimentary canal from the proteid elements of the food which, as a result of the presence and activity of certain bacteria, undergo putrefactive disintegration instead of digestive fermentation. The parent substance, indol, combining with the inorganic element potassium to form indican, is readily absorbed from the alimentary tract and eliminated under its own form through the renal glands. Its presence in the urine thus primarily indicates putrefactive disintegration of the proteid substance in the intestinal canal. With this putrefactive process there are other and toxic products formed in the alimentary canal and absorbed with the peptone saccharine elements and fats. These toxic substances act with varying degrees of toxicity and interfere to a greater or less extent with the naturally perfect transmutation of the proteid molecules, resulting in retrograde changes in the metabolism of the various tissues and organs of the body. This primary imperfect change of chemical substances in the bioplasm, unrecognizable except through changes in the composition of the urine, is unquestionably the beginning of many if not all of the profound disturbances which sooner or later give rise to absolutely and easily recognizable changes in the various tissues and organs of the body. Thus the importance of

\*Abstracted from *The Medical Examiner* for February, 1906.

detecting early this abnormal product is clearly evident.

Indican is easily detected in the following manner: Add in a test tube equal quantities of urine and chemically pure hydrochloric acid. To this mixture add one or two drops of a  $\frac{1}{2}\%$  solution of potassium permanganate. If indican is present in the urine there will be formed a purplish cloud in the fluid in the test tube. If to this is added a few drops of chloroform, and the test tube shaken vigorously, this purplish coloration will be replaced by a deep blue coloration, which is due to a precipitation of the indican by the chloroform. The amount and intensity of the precipitated indican determines the extent of the putrefactive changes going on in the alimentary tract.

Uric acid is an oxidation product in the reduction of the proteids. It is, physiologically speaking, a suboxidation product only when the quantity produced daily is in excess of the amount normally present in the urine and is free and is not held in combination with sodium. When the animal economy takes into the blood stream an amount of proteid material in excess of that capable of being completely oxidized by the oxygen received through the lungs imperfect reduction of the proteid elements results as a necessary sequence. The output of the urea decreases and that of uric acid increases. No matter how produced, this excessive amount of uric acid always indicates one thing, and only one thing, which is imperfect oxidation of the proteid molecule. It is simply a symptom indicative of a disturbance in metabolism. An excessive amount of uric acid is best detected as follows: The upper stratum of a test tube partly filled with urine is brought to the boiling point, a few drops of a 4% solution of acetic acid is added and the boiling repeated and the tube set aside in a cool place. If uric acid is present in excess it will commence to form in crystals under the surface layer of the urine. The amount so formed will give the relative quantity secreted.

Oxalates in the urine, usually represented by the oxalate of calcium, are indicative of a still lower grade of suboxidation than is the case with an over-production of uric acid. The presence of oxalate of lime in the urine is determined by microscopic examination of the specimen in question. When the condition of suboxidation exists, the octahedral crystals of lime oxalate are found in the field of the microscope. The amount present, the increase or

decrease in the sample examined from day to day, determine the degree of suboxidation in this line. The presence of an oxalate in the urine always indicates a disturbance in the metabolism of the nervous mechanism. If in addition to this, or even without the formation of oxalate of lime crystals, there is a precipitation of the earthy phosphates in acid urine upon raising the urine to the boiling point, there is no question as to the existence of a faulty metabolism in the nervous system.

## BOOK REVIEW.

THE EXAMINATION OF THE FUNCTION OF THE INTESTINES BY MEANS OF THE TEST-DIET.—Its application in medical practice and its diagnostic and therapeutic value. By Prof. Dr. Adoif Schmidt, Physician-in-Chief of the City Hospital Friedrichstadt in Dresden. Authorized translation from the latest German edition, by Charles A. Aaron, M. D., Professor of Diseases of the Stomach and Intestines in the Detroit Post-Graduate School of Medicine; Clinical Professor of Gastro-enterology in the Detroit College of Medicine; Consulting Gastro-enterologist to Harper Hospital, etc. With a frontispiece plate in colors. Crown Octavo, 91 pages. Price, \$1.00, net. F. A. Davis Company, Publishers, 1914-16 Cherry St., Philadelphia.

The author has attempted to present the subject in a manner which will render it applicable to the needs of the practitioner. Any work which aids in the more accurate diagnosis of the great group of intestinal diseases is to be welcomed. In probably no class of diseases is more empiricism practiced simply from the fact that an accurate diagnosis of the pathological conditions present has been beyond the ability of the general practitioner. This little book will help to fill a real need.

CASE TEACHING IN MEDICINE.—A series of graduated exercises in the differential diagnosis, prognosis, and treatment of actual cases of disease. By Richard C. Cabot, A. B., M. D., Instructor in Medicine in the Harvard Medical School and Physician to the Out Patients at the Massachusetts General Hospital. Published by D. C. Heath & Co., Boston.

Medical teaching by case histories, actual and hypothetical, has been in vogue for some years, but it has remained for Dr. Cabot to compile a book of cases for use in the classroom in preparation for, and supplementing actual bedside work. The cases as given include such data as would be obtained by the examining physician, family and personal history, physical examination, blood and urine where required. A few relevant questions are submitted on each case, and in the teachers' and physicians' edition, these are answered,



with suggestions for further study. In the edition for students this latter feature is omitted. The book is not only to be recommended for use in colleges, but forms excellent subject matter for the private physician who desires to refresh his diagnosis and general medical knowledge.

#### BOOKS AND PAMPHLETS RECEIVED.

Annual Report of the United States Public Health and Marine Hospital Service, 1905.

Report of the American Society of Tropical Medicine, 1905.

An examination will be held by the United States Civil Service Commission on June 6 and 7 to secure eligibles for the position of medical interne at the Government Hospital for the Insane at Washington. The salary is \$600 per year with maintenance, and the appointment may terminate in one year or the appointee may be promoted. The examination in Vermont will be held at Montpelier, Rutland and St. Johnsbury; in New Hampshire at Claremont, Concord, Keene and Portsmouth, and in Maine at Bangor, Houlton, Machias and Portland. Applicants should apply either to the United States Civil Service Commission at Washington, or to the secretary of the board of examiners at the places mentioned.

## SOCIETY MATTERS.

### STATE MEMBERS.

#### *Additions to the list as published.*

#### CALEDONIA COUNTY.

E. F. Root .....	East Burke
H. A. Elliott .....	Barnet
T. E. Farmer .....	St. Johnsbury
W. W. Genge .....	St. Johnsbury
C. B. Wilson .....	Bradford
W. N. Riker .....	Wells River

#### BURLINGTON AND CHITTENDEN COUNTY CLINICAL SOCIETY.

The regular meeting of the Burlington and Chittenden Clinical Society was held March 29, when Dr. F. A. L. Lockhart of Montreal read a paper on "Clinical Consideration of Cancer of the Uterus." Discussion was opened by Dr. John B. Wheeler of Burlington.

#### WASHINGTON COUNTY MEDICAL SOCIETY.

The meeting of Washington County Medical Society, held in the City Court room at Barre on March 13, was largely attended, and the following program was carried out: "What to do with Prostatic Sufferers," Dr. J. P. Gifford of Randolph, discussion by Dr. C. E. Chandler of Montpelier and Dr. L. W. Burbank of Cabot; "Urinalysis," Dr. W. J. Upton of Waterbury, discussion by Dr. G. F. Parmenter of Montpelier and Dr. C. F. Camp of Barre; "Drug Eruptions," Dr. G. Gordon Campbell of Montreal, general discussion; "Aconitine," Dr. E. B. Watson of Williamstown, discussion by Dr. E. H. Bailey of Graniteville and Dr. J. H. Judkins of Northfield.

## OBITUARIES.

Read Before the Vermont State Medical Society, at its Last Annual Session.

DR. WILLIAM N. PLATT.

*By C. W. Howard, M. D., Shoreham.*

Changes marks everything around us. One by one disease comes and singles out a member of our fraternity and silently takes him away.

William N. Platt, M. D., son of Theodorus Platt and Mary Nichols Platt, was born Oct. 7, 1849, at Enosburgh, Vt. His boyhood was spent on the farm and in attending a district school. About 1861 the family moved to Plattsburgh, N. Y., a town which had been settled by direct ancestors of Dr. Platt and received the family name. After attending the academy at Plattsburgh, he went to Hobart College, but on account of financial limitations was obliged to cut short his course and hurry to the study of his chosen profession. He graduated from the Medical Department of the University of Vermont in 1869, at the age of twenty, and after a few months in Bellevue Hospital he came to Shoreham and began the practice of medicine, where he soon had a large practice in this and surrounding towns. He was ever ready to answer a sick call, no matter how bad the roads or dark the night. I have known him to remain at the bedside of a patient for some days, giving his remaining patients over to the care of some other physician. He was very sympathetic and cheerful at the bedside of his patients, and made them look on the bright side of their illness. He had a certain personality about him that infused hope, and they were always his friends as well as patients, many of them insisting on his attendance even after he was not able to go about alone. In 1880 he married Elizabeth L. Jones, only daughter of a wealthy farmer, who died in 1890. After her death he gave much of his time to the care of his property.

As a citizen Dr. Platt was a conspicuous man in the community. He was a worker and a leader. Any project which promised to better the condition of his fellows received his liberal support. While he was not an office-seeker, he felt it his duty to render such service as he could, and in whatever place he was put he acquitted himself in a creditable manner. Politically he was a republican and as such was elected to the State Legislature from his town in 1892, where he served on the Committee of Ways and Means. In 1894 he was a member of the Senate from Addison County. In 1895 he was appointed by Governor Woodbury one of the Trustees of the Vermont State Hospital for the Insane to fill the vacancy caused by the death of William H. Hunt of St. Albans. In this office he remained until the time of his death, working faithfully for what he considered the best interests of the institution. He was on the consulting staff of the Mary Fletcher Hospital for several years, also served as one of the Medical Censors of this Society from 1897 to 1902. In 1900 he was a delegate from the first congressional district of this State to the republican national convention. He was also appointed one of the members to notify the nominee. He was much interested in state and county medical societies, always urging his brother physicians to join and take part in the discussions. He was largely instrumental in the re-establishment of the medical society in his own county, and was serving as its president at the time of his death. He was a member of the Masonic fraternity, and was well known throughout the state.

In 1900 he married Miss Mary Mixer, M. D. After his marriage he again took up general practice. In June, while on his way to attend the examinations of the medical students at the Vermont University, he had the first attack of apoplexy. He was soon able to be about and attend to some of his duties, until December, 1903, when he had a second attack and in about a year a third, and died Nov. 14, 1904, aged 55 years. During the many years of our association, I always felt safe to call on him for advice or to leave my patients in his care when I was away, knowing that I would receive fair treatment. He did much to smooth many disagreeable things for me that occurred in business as well as in practice. It is the fate of all of us after death to have our places filled and to be soon forgotten, but the memory of the good deeds, the kind manner, and the generosity of Dr. Platt will not soon fade from our memory.

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DR. W. M. STEARNS.

*By O. J. Gilchrist, M. D., Rutland.*

Dr. William Marcellus Stearns was born March 22, 1857, and died July 28, 1904, in Rutland, Vt. He was educated in the public schools of Rutland and was a graduate from the Medical Department of the University of Vermont in the class of 1882. He immediately commenced the practice of medicine in West Rutland and was married in December of the same year to Miss Jessie S. Bacon of Brooklyn, N. Y. Seven years later he removed to Rutland and entered into association with Dr. John D. Hanrahan. On account of failing health he relinquished practice in January, 1902. He was a member of the County Board of Pension Examiners during President Cleveland's two terms, was health officer of the city of Rutland in 1893, also in 1895 and in 1896. He was a member of the state and county medical societies, of the Masonic and Pythian brotherhoods, and of the Congregational Church of Rutland. He was a life-long democrat. As a physician he was faithful and unsparing of himself in his devotion to his patients. His forte and predilection lay in the field of surgery. He possessed mechanical genius. As a companion he was genial, ever eager to do a kindness. His wife and his only child, Harvey N. Stearns, are living.

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DR. CHARLES C. RUBLEE.

*By Geo. L. Bates, M. D., Morrisville.*

Dr. Charles Clark Rublee was born in Montpelier, Vt., Oct. 31, 1852. His father was Dr. Chauncey Rublee, and his mother the daughter of Dr. Charles Clark, who was one of the pioneer physicians of the state, and one of the early members of this society. Both these men were born in Montpelier, Vt., and had much to do with the medical and political history of their time in that community. Thus it may have been that Dr. Rublee early took the infection for the study of medicine, and with such a foundation for an inspiration, no wonder that he became more than ordinarily successful in his chosen work. He obtained his preliminary education in the Washington County Grammar School of Montpelier, and later was a student in Dartmouth College, and afterwards began the study of medicine in the office of Dr. J. E. Macomber. Subsequently he was a student in the University of Vermont Medical College, Harvard Medical College, and the College of Physicians and Surgeons of New York city, where he was graduated in the class of 1873. He at once located in Morrisville, Vt., where he was continuously in practice until his death, with the exception of two years, one of which

he spent in Montpelier and the other in Hamburg, Iowa. He was the oldest practitioner in Morrisville, and the second oldest in the county.

While attending college both in New York and Burlington, he was assistant to Professor Benjamin Howard, surgeon. He served as Pension Examiner under Presidents Harrison, McKinley and Roosevelt. He was also health officer of his town; was president of the Lamoille County Medical Society at the time of his death; was a member of the Vermont State Medical Society and American Medical Association. He had also been a Free Mason for years, being past master of Mt. Vernon Lodge at Morrisville, Vt.; was a member of Tucker Chapter, R. A. M., Palestine Commandery, and Mt. Sinai Temple of the Mystic Shrine. Politically he was a republican. Dr. Rublee was united in marriage to Kate Spicer of Waterbury, Vt., by which union four children were born, three daughters and one son, the latter, George Clark Rublee, being now a student of the University of Vermont Medical College. Mrs. Rublee died Feb. 24, 1897, aged 44 years. Dr. Rublee married for his second wife Miss Lou C. Mooney, daughter of Captain A. A. Mooney of Mansonville, P. Q. One son was born to this union, who died at the age of two years.

An intimate relationship both professionally and socially, extending over a period of eight years, and a personal acquaintance dating back to my boyhood, with Dr. Rublee, gives me perhaps a greater knowledge of his life and attainments than any one else present who might have been chosen to act in this capacity. The most difficult part for me to perform in writing this article is to keep within the bounds of the real subject. It is the every day association with a person during their successes and failures, their griefs and joys, during health and sickness, that gives one the true and most perfect knowledge of their character. It is at these times one discovers the man as he really exists, when the conventional disguise is thus removed and the heart laid bare. Such has been my opportunity for acquaintance with Dr. Rublee, and I know him as doctor, citizen and friend. Bravely and unflinchingly did he face death, and fully aware of his condition, though he had been for more than three years growing physically weaker day by day, yet no one ever heard him say that he did not enjoy the best of health. And during the hardships of an active country practice, he did his work faithfully and well, and at what a terrible exertion this work was done only those who are actively engaged in the same business can tell; yet he was ever cognizant of his condition, and dutiful to those who employed him in the capacity of councillor and physician.

He was a man of more than usual professional ability, ethical even beyond the hewn line, and hospitable to a fault, which made him a general favorite among the laity as well as the profession; and while many could never see beyond a certain dignified bearing, which was natural with him, how many poor unfortunate ones saw him, unrobed of this, stand by them in trouble and pain, as their best and most faithful friend. But the greatest token of my esteem and respect I can to-day give unto his memory, while looking back in reminiscence, is his honest and ethical relationship with the profession, for in my acquaintance he had no peer. Attending to his work until three weeks before his death, he battled bravely against that Power which none may hope to conquer, and fully realizing the approaching end, he demonstrated his indomitable courage and cheerfulness until the very last, passing away on the morning of Sept. 11, 1905. Thus died a friend, a councillor and a doctor.

"Order is Heaven's first law, and this confessed,  
Some are, and must be, greater than the rest."



# Vermont Medical Monthly.

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## ORIGINAL ARTICLES.

### THE EYES AND EARS OF SCHOOL CHILDREN.\*

*By Frank Allport, M. D., Chicago, Professor of Clinical Ophthalmology and Otology, Northwestern University Medical School, Consulting Oculist and Aurist to the Chicago Board of Education, etc.*

So much has been written on the subject expressed by the title of this address that a literature of its own has developed, and it is quite impossible to write more upon this theme without indulging in much repetition and recapitulation. I feel especially apologetic in this regard, as I have for ten or eleven years appeared almost constantly in print on this subject, and feel that I have but little more to say, except to urge activity on the part of physicians, educators and legislators, that the good work already begun may be promptly finished. Nevertheless, you have kindly invited me to address this body of health officers, and the honor so courteously extended, has found in me a ready responsiveness, for I never can and I fear never will have strength to resist a call to talk upon my favorite theme. Therefore, my colleagues, I present myself before you prepared as of yore to again do battle for the eyes and ears of the coming generation, realizing fully that I have nothing new to offer, but believing that, like some good old books and music, repetition can do no harm, and feeling that the last word will not be said upon this subject until every boy and every girl in the civilized world shall have had the enormous benefit of annual physical examinations and proper medical supervision, which shall fit them as far as may be for the work of acquiring an education without physical disintegration.

The public schools are a public trust, through whose portals all parents should confidently and confidently lead their offspring, feeling that when the care of these young lives is transferred to the supervision of the school authorities they are safe from harm, and will

at least be handed back to them in as good condition as they were at first. That good and creditable work along these lines has been and is being accomplished is unquestionably true, and conditions are immeasurably better than they were ten years ago, but much work remains to be done, and until the annual and proper physical examination of *all* school children shall have been accomplished, those having the interest of the coming generation at heart should press on, battling for the right, until victory is perched upon their banners.

It should never be forgotten that there are said to be in the United States alone to-day almost 20,000,000 school children; that about 8,000,000 of such children have some eye defect which more or less cripples them in the acquirement of an education; that about 8,000,000 of such children suffer from some ear, nose or throat disease which also impedes their school progress, and that a vast majority of such abnormal conditions can be either cured or materially alleviated by early medical interference, and will become chronic or incurable if neglected. Think of it! There are in this country about 16,000,000, or 80% of school children suffering from some eye, ear, nose or throat disease which can easily be detected and generally cured, if the public health and educational authorities will only decree that this work shall be done. Is it hard to do? No. Is it expensive? No. Is it in any way objectionable? No. Can it be easily and effectively accomplished? Yes. Then why is it not done?

My imagination is not always active, and for this defect I humbly beg my hearers' pardon, but to the best of my knowledge and belief the reason for the non-accomplishment of this plain duty on the part of hygienists, educators and legislators, is simply apathy, neglect or politics. Can such authorities not rise from the level of the past to the heights of the present and of the future, and offer this tardy reparation to the poor and neglected children of this country, who must some day control its destinies? I believe that they can, and that they will, and that the next few years will disclose the full fruition of the devoted labors of the past.

It may also be of interest to know the financial aspect of the situation, as this phase of a problem will often exert a potent influence

\*Read before the local and State Boards of Health of Ohio.

where all others fail, and the fact that the people of the United States have about \$700,000,000 invested in public schools may add a dignity to the situation and stimulate a desire to have the visible representations of this immense amount of money managed in the best possible manner, which is quite impossible unless the school children of this country are in good physical condition.

It may also interest students of sociology to know that there are in the United States over 300,000 blind people, many of whom would not have become blind if their disabilities had been detected during school life, and that it costs the public in the neighborhood of \$15,000,000 to care for these unfortunates. Reducing the question then to the mere sordid standard of money, is it a matter of public economy to neglect the eyes of school children?

We should remember also that over 50,000 American children are annually removed from school on account of debilitated physical and nervous conditions brought on by physical incapacity and injudicious mental pressure. Such children, being unable to acquire a suitable education, fall by the wayside, grow up in invalidism and ignorance, and help to fill the ranks of the weaklings, the worthless and the criminals.

It would seem then almost unnecessary to produce an array of arguments with the object in view of convincing those having such matters in charge, of the necessity for the annual and systematic examination of school children's eyes and ears, for it is an undisputed fact that healthy eyes and ears are quite essential to the ready acquirement of an education, and yet it is but natural to presume that where the proper authorities do not take decisive action along these important lines, they cannot be fully awakened to their duties and responsibilities. It seems then essential to remind them that almost all children are born with reasonably healthy eyes and ears and that such conditions as myopia, hypermetropia, devastating inflammatory conditions, etc., are usually due not only to possible inheritances, but to mal-nutrition, excessive study under improper conditions, neglect, lack of judicious medical attention, etc., most of which could and would be corrected if the situation was thoroughly understood and studied. I claim that such an understanding is quite impossible without annual systematic examinations. The sporadic care of this child and that child does not suf-

fice; the general and kindly observation of children by even willing and intelligent teachers, with occasional advice to students and parents that medical advice be sought, is not enough, for generally no attention is paid to such unofficial suggestions, certainly not as much as would be paid to a formal printed notification of the child's imperfect physical condition, and besides this many important and serious diseases may exist without exciting the observation of the average teacher.

The myopic eye is a diseased eye proceeding from small degrees of short-sightedness to those of enormous extent, accompanied by disastrous ocular congestions, detached retina, etc., all fostered by excessive study under improper conditions, such as bad and meagre illumination, insufficient outdoor life, lack of proper glasses, etc. The average increase in myopia during school life is about 20%. In Germany, the land of bad print and profound students, this proportion is increased to about 60%. The hypermetropic eye renders study exceedingly irksome by producing head aches, tired eyes, nervous exhaustion, etc., thus sowing the seed of illiteracy, ignorance and idleness, all of which might be prevented by timely detection and medical intervention, coupled with the correct adjustment of glasses. Inflammatory ocular conditions, such as the various forms of conjunctivitis, keratitis, etc., besides being foci of more or less dangerous contagion to other children, produce conditions making suitable study impossible and improper, and again provide scholars that are a burden to their teachers and encourage the swelling of the ranks of the idle and the outcast. Nasal and throat hypertrophies such as turbinated enlargements, and polypoid adenoid and tonsillar growths, produce deaf children, unable to absorb ordinary education, and discharging ears, which not only induce deafness, and may be a menace to life, but necessitate the production of micro-organisms, which should exclude such children from school owing to their menace to the health of other scholars.

The pity of it is that practically all of such conditions, and many more too numerous to mention, could be cared for and cured if detected early in life, by the annual systematic examination of all school children's eyes and ears, and of the various methods that have essayed from time to time to accomplish this purpose, the simple examination by school teachers is the only one that has been even



reasonably successful, and is surely the only one that contains sanguine prospects of becoming universally adopted. Such examinations would be made if only all health and educational authorities, aroused to the importance of the situation, would issue their separate orders that such examinations *must be made*; the pity of it is, they do not do it. A large proportion of the idle and criminal classes is being supplied and re-supplied, as generation after generation of children are thrown upon the world by children who, for some reason or other have failed to acquire the education which enlarges and uplifts the soul and character, and opens up avenues for honorable and useful employment. Visit the criminal courts, the reformatories, the jails and prisons, and how often do you find law breakers who have been plucked from the ranks of the educated? Occasionally, it is true, but the great rank and file of these offenders are men and women of meagre or no education. Some, it is true, are natural criminals, the offspring of criminal parents, but even here there must have been a beginning, proceeding some generations back, perhaps from some ancestor who was deprived of an education by some physical defect, possibly of the eye or ear. The great mass of criminals, however, are not born offenders, but become so through associations and lack of a cultivating and ennobling education which is, of course, impossible if physical defects place such an education beyond their reach. I have no desire to magnify my theme, and do not by any means believe that all crime could be expunged from society by the correction of the physical defects of children, but I earnestly believe that there is enough real matter in this subject to claim the fixed attention of sociologists, health and educational authorities, and law makers, both as a matter of moral obligation and public economy.

The physical condition of our children reaches down then to the very sub-structure and foundation of society. The boy of to-day becomes the man of to-morrow, to whom we and succeeding generations must look for the advancement and prosperity of our country. The child cannot act for himself, and often the parent is equally helpless, or careless. It behooves us, therefore, who have such matters in charge to act for him, and to act wisely and well. His physical and moral, as well as his intellectual status and progress should be closely guarded and watched, and probably no ave-

nue through which he can be reached is so important and accessible as the public school. Here he spends most of his waking hours, and it is here that his body, mind and heart should be under the strictest surveillance. The school requests, nay enforces his attendance, and volunteers to superintend the unfolding of his young life in its most critical period. It is, then, the sacred duty of school teachers and authorities to note well their important and self-assumed obligations, and to give the child the benefit of the best and most modern thought and judgment upon this sacred and important subject. Our schools undoubtedly provide opportunities for great intellectual advancement, and I believe that the general moral tone of our schools is of a high quality, but what of the physical condition of the scholar?

I believe we must all view with pride the marvellous evolution of our public schools and our educational system, notwithstanding the fact that over ten per cent. of the children of this country can neither read nor write. But while viewing with satisfaction the marked advance, during the past twenty years, in means and methods of teaching, I contemplate with peculiar satisfaction the care for and development of the body that is now evident in all schools, and which must rightfully be largely attributed to the untiring work and writings of the medical profession. Witness the play grounds with their gymnastic apparatuses, the baseball, football and golf teams; observe the sanitary buildings, well lighted and ventilated; notice the well-built and adjustable desks; the well-printed books, the good drinking water and clean cups; see the careful seating of the scholars with reference to their vision and hearing, not forgetting the conscientious supervision of each scholar's physical condition by the average room teacher and the medical school inspector. Such observations must make us realize that progress has indeed been made, and that while much remains to be done, we have no reason to feel ashamed of the advance and accomplishments of the past, and have much occasion to believe that the future holds in its hands the full fruition of all our hopes.

Two things are necessary to raise corn, one is the seed and another is a favoring soil and conditions. So it is with the enlightenment of the young. The means of education are necessary, viz.: the buildings, properly placed, constructed and conducted, including systems, books, etc., etc., and *then* the child with the

receptive mind and healthy body and senses, capable of receiving instruction and profiting thereby. We are surrounded by the *means* of education, for modern schools with their effective machinery are a source of gratification and delight to all, but enthusiastic, progressive and systematic educators do not always consider the *soil* upon which the seed of enlightenment falls; in other words, they are disposed to consider children as a massed entity, and do not separate them into isolated individuals with distinct inheritances and mental and physical peculiarities rendering them more or less adaptable to the requirements of the modern public school. Children are thrown into the great machinery of school life, are divided into grades, and are expected to adhere to them, and become educated according to a certain system. A child may have a weak or crooked back which will become aggravated by close confinement at improperly constructed desks; he may have lungs handicapped with the incipient germs of tuberculosis, encouraged by the protracted inhalation of vitiated school air; he may languish from general systemic impoverishment and pine and droop under too much study and too little fresh air.

These are some of the conditions noticed in school children militating against the easy acquirement of an education, but more directly essential still are the existence of certain abnormal conditions of the organs of special sense of seeing and hearing, which are certainly of prime importance in the imbibition of presented instruction. If a child cannot see well and hear well, his position is certainly most unfortunate in the modern public school, where he is expected to keep up with his grade work or else subject himself to chagrin and mortification. Do not understand me as saying that our schools are likened to the Car of Juggernaut that ruthlessly throws down and crushes all who unfortunately come in contact with its destroying wheels. Far from it. I fully appreciate the gentle, humane and sympathetic feelings that proceed from the hearts of most teachers toward those children committed to their care. I am not unaware of their watchfulness and solicitude over their little flock, that prompts them to change the seats of the deaf and near-sighted, to make allowances for any noticeable physical or mental shortcomings, to frequently visit parents and urge upon them the necessity of action concerning the health of a child; but these are isolated though

frequent instances inspired by individual sympathy and character, and restricted by necessary ignorance of such subjects on the part of the teacher.

What we want is a paternal systematic school system of health investigation, by which the physical defects of children will be made manifest, and steps taken to protect pupils against themselves, and in many instances against their parents. We also want a system that, after these unfortunate conditions have been discovered, will not only *allow* but *insist* upon the harmonizing of the studies to the child, and not the child to the studies. I am not unaware of how often this is done; that a doctor's certificate of poor health is usually respected; that the course of study is sometimes changed under the advice of the parent or teacher; but I think I am not wrong in saying that these changes are comparatively infrequent and so little encouraged that children will often endure much physical discomfort or even suffering, rather than assume the chagrin and mortification brought upon them by the unenviable distinction of a grade change. These changes should be inspired from the intelligent illumination of regular physical examinations, and should be so common as to excite no comment, and give rise to no loss of a pupil's self-respect, or disappointment on the part of the parent, who frequently allows a child to languish and acquire permanent invalidism rather than interfere with his class standing or the date of the projected graduation.

I would not be understood as advocating the abolition of systems and grades. It is needless to say that schools cannot be properly conducted upon other principles. Neither do I advocate the *indiscriminate* changing of grades, without just and adequate consideration. Neither do I ignore the fact that grades are frequently changed for good and sufficient reasons. I advocate more systems and more grades. I advocate a system of physical examination in schools by which we may *know* the condition of a child's health, and not trust to chance or circumstance to detect it, and I advocate more and shifting grades, commensurate with the physical condition of defective children. In other words, I do not believe in the wholesale education of the rising generation, which is our country's hope, its bulwark and defense, and whose physical, as well as its moral and mental condition is a sacred trust which we must guard and cherish. I do not



believe in thrusting these little, yielding, impressionable, often sickly lives, into a common crucible to be moulded and turned out with identical exactitude and precision. I believe that children should not be damaged by their educational existence, but should emerge from the portals of the American public school in better physical, mental and moral condition than when they were entrusted to its fostering care, and that steps should be taken calculated to bring about the fulfillment of this plain and imperative duty.

(*To be continued.*)

### SCIATICA.\*

*By Morgan B. Hodskins, M. D., of Palmer, Mass.*

Sciatica is that form of neuralgia which affects the sciatic nerve and its branches, sometimes the cutaneous femoris nerve, and occasionally extends to the other roots of the lumbosacral plexus. This may be due to an organic disease of the nerve, a genuine neuritis, or to a functional neurosis. In the former there may exist varicose dilatations of the blood vessels of the nerve, or a collection of serous exudation underneath the nerve sheath.

We suspect neuritis when the disease is accompanied by such conditions as marked tenderness on deep seated pressure over the nerve trunk, atrophy of individual muscles or groups of muscles supplied by the nerve, pronounced sensory disturbances, changes in the electrical reactions and perversions of the tendon jerks. In a great many cases the inflammation is so slight or the process of repair is so active that these signs cannot be obtained. Moreover, the agents that produce inflammation or degeneration of the nerves are the same that cause functional disorder accompanied with pain. In the functional cases no anatomical changes can be detected in the nerve.

#### ETIOLOGY.

Next to trigeminal neuralgia, sciatica is by far the most frequent and the most important form of neuralgia. The anatomical course of the nerve renders it especially exposed to mechanical injuries and to the influence of cold. It is more frequent in men than women,

particularly those of middle age. It is not rare in the old, while children are almost exempt. The sciatic nerve is more or less immune to injurious conditions before the age of puberty and from that time until the thirtieth year it is rarely affected. From thirty to sixty, and especially from forty to fifty, it is particularly apt to become diseased either functionally or organically in such a way as to cause pain. A neuropathic condition increases the predisposition to this disease; but it is not so important here as in the other neuralgias. More cases of sciatica are seen during the winter than in all the other seasons combined. It is seen more commonly among the laboring than the higher classes and found often among people who run sewing machines or among stokers. With the latter it occurs chiefly in the left leg. It often affects well and healthy persons, particularly those whose occupations necessitate exposure to the wet and cold and after physical effort that calls for prolonged use of the legs without sufficient rest. These conditions are very potent factors in causing sciatica. It may develop after gout and after diabetes mellitus. Bilateral sciatica is often of this origin. The relationship of syphilis is less sure if we exclude the fact that gummata are sometimes found on the nerves.

Chronic intoxications by alcohol, lead and other metallic poisons, may cause sciatica providing the toxin is not intense enough to cause disorganization of the nerve itself. It sometimes occurs after the acute infectious diseases and it may follow gonorrhea. Some cases may result from a muscular rheumatism of the lumbar muscles. Inflammation in the neighborhood of the sciatic nerve may produce it, exposure to cold is a prominent cause, and especial danger exists in sitting on cold, wet surfaces. Traumatism is also a cause of importance. Compression of the sciatic or its roots as by pelvic tumors, gravid uterus, the head of the child during labor and also the use of obstetrical forceps may cause it. Inflammatory conditions in the pelvis, especially perimetritis, may affect the sciatic region. Anemia may produce it, and sciatica of this origin may occur with pregnancy and prolonged lactation. Pain in the domain of both sciatic may be caused by intraspinal growths pressing on the roots of the spinal nerves and the cauda equina from which the sacral plexus takes its origin. The most common variety of such intraspinal neoplasm is unquestionably

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gumma. The nerves themselves may be the seat of these new growths. The disease is usually unilateral. Bilateral sciatica is, as a rule, symptomatic. An idiopathic sciatica may, however, be bilateral. Hysterical sciatica is an uncommon affection and should be easily diagnosed. Chronic constipation, impaction of the feces and displacement of the uterus are also given as causes.

#### SYMPTOMS.

The symptoms are not, as a rule, very severe at first; but increase in the course of some days or weeks. In the beginning the patient may have only a drawing sensation in the posterior surface of the thigh or in the gluteal or lumbar region, or this may be accompanied by more or less paresthesia, itching, crawling sensation, tingling or a feeling of numbness, and is almost always worse between midnight and morning. This soon changes into a pronounced pain of a piercing, boring, or a lightning-like character, which generally passes through the extremity from above downwards. These pains follow the course of the sciatic nerve, beginning in the gluteal region where it emerges from the sciatic foramen or higher up and pass correspondingly to about the middle line of the thigh, down the posterior surface and is transmitted to the peroneal nerve and its branches or to the tibialis posticus. The pain can pass to all parts of the foot except the inner, which is supplied by the crural nerve or the saphenous major. The pain usually follows the course of one nerve and the patient is usually able to follow the course of the nerve with his finger. In a very few cases the plantar nerves alone have been affected and in this form the pain is apt to be very severe. The pain appears to the patient to be situated in the skin or a little deeper and comes on in paroxysms or exacerbates paroxysmally, especially between midnight and morning, and is apt to be particularly severe at this time. It is brought on and increased by pressure movements and uncomfortable positions. Walking is difficult and the patients seek to relieve the sick limb, supporting themselves as much as possible on the sound one, especially avoiding those movements which tend to stretch the sciatic, namely flexion of the thigh with extended knee or extension of the leg with flexed hip. As a rule, the leg is held a little flexed at both the knee and hip joints.

According to some, a scoliosis of the lumbar spine is not uncommon, the concavity being toward the sound side. A scoliosis toward the same side has been observed, supposed to be due to a reflex spasm of muscles. In sitting the patient assumes a characteristic attitude, resting on the tuber ischii of the well side to guard the diseased sciatic from pressure. It is only rarely that the nerve is painful throughout its whole extent; but generally a number of pressure points may be found. The following are the most constant ones:

One beside the posterior superior iliac spine over the place of exit of the nerves from the great sacrosiatic foramen; one at the lower border of the gluteus maximus between the trochanter and the tuber ischii; one in the middle of the popliteal space; another below the head of the fibula; often also malleolar pressure points. Sometimes the tenderness can be detected by the rectum or vagina. In a very few cases the pressure points are entirely absent.

The sensitiveness of the nerves may be demonstrated in another way. The patient is asked to lie down and his leg is then flexed upon the hip joint. Generally the pain is not felt on the posterior surface of the thigh or in the gluteal region when the leg is raised a foot or so, sometimes only after it forms an angle of from  $90^{\circ}$  to  $100^{\circ}$  with the pelvis. This pain disappears as soon as the leg is flexed on the thigh. This is therefore due to stretching the sciatic nerve. The sciatic phenomenon is of great diagnostic importance. Sensory disturbances are usually absent; but there may be a slight hyperesthesia. The knee jerks are generally increased slightly in the diseased limb in the early stages; but may be diminished in the later ones. Slight weakness of the flexors of the leg is occasionally noted, sometimes a fibrillary tremor is noted, and in chronic cases a slight atrophy of the muscles may be detected. If the reaction of degeneration should be present the case is one of neuritis and not one of neuralgia. The pain on pressure in neuritis is very great. During the height of a paroxysm of pain the muscles of the leg may become involved in a clonic spasm.

#### DIAGNOSIS.

Great care should be exercised in the diagnosis of this disease in accident cases. It is also very important to diagnose between pri-



mary and symptomatic sciatica and more especially in bilateral sciatica should we be on our guard for some other disease. In bilateral cases the examination of the urine for sugar should never be omitted. Hutchinson says that out of twenty cases diagnosed as sciatica, in nineteen there exists no trouble whatever in the nerve. This is probably going too far; but without a doubt many diagnostic sins are committed here, and that there are many cases called sciatica, after a superficial examination, which upon a careful investigation will prove something entirely different. A marked anesthesia, and especially one combined with atrophy and a reaction of degeneration, indicates neuritis and should never be confounded with neuralgia.

The pains accompanying spinal disease almost never limit themselves to the sciatic nerve of one side, and the other symptoms in these cases show the true nature of the disease, as paralysis of the lower limbs, vesical disturbances, etc. Diseases of the hip joint may cause pain in the hip or knee; but it does not follow the tract of the nerve, and is attended by the other well-known symptoms of joint disease. Patients with hemorrhoids may have vague pains in the legs. A careful examination of the rectum would exclude this cause.

Hysteric sciatica is characterized by pains of an indefinite localization accompanied by psychical alterations. It must also be diagnosed from intermittent limping or claudication or angina euris. This condition was first noted in horses and also occurs in men. It consists of a feeling of numbness, pain and fatigue, occurring in one leg in attempting to walk and increased by exertion so that locomotion may be extremely difficult and later may be impossible. After a little rest the trouble disappears. Arterio-sclerosis is usually found and absent pulsations are noted in the posterior tibial and dorsalis pedis arteries. This disease is probably due to a narrowing of the lumen of the arteries from arterio-sclerosis or arteritis obliterans, thereby causing a defective nutrition of the muscles. This malady is sometimes a prodrome of gangrene and occasionally occurs with diabetes.

Achillodynia should not present any serious diagnostic difficulties. It consists of severe pains which arise at the insertion of the Achilles tendon, in walking and standing. Occasionally a swelling exists and is probably a bursitis. It is said to come on after gonorrhea,

malaria and trauma. Similar troubles occur in the region of the unciform bone. The nature of Morton's metatarsalgia, which is a severe pain in the region of the fourth metatarsophalangeal joint, is somewhat obscure. The causes have been given as tight shoes, excessive pressure on the nerves of the foot, gouty diathesis, continual standing, general nervousness, etc. Pain in the legs is sometimes associated with superficial or deep varicose veins; but the differential diagnosis should be easy.

#### COURSE.

It is frequently a question of months and years before any decided and lasting improvement is brought about. On the other hand remissions are very frequent and they may possibly last for weeks or even months. The patient begins to think that he has been permanently cured, when suddenly and often without any apparent cause, or a very trivial one, such as a long walk, the pain will again make itself manifest with undiminished intensity and the treatment has to be started at the beginning again. The more frequent such relapses, the more doubtful becomes the prognosis as to complete recovery.

#### TREATMENT.

Before beginning treatment, it is very important to determine whether the sciatica is primary or whether it is secondary to some other disease. He who treats sciatica in a routine way according to a plan he has found successful in some cases, or according to instructions which he has got from a text-book, is bound to have a larger percentage of failures than he who makes a most searching investigation to find the cause of the sciatica and the condition of which it is an expression.

The general plan for the treatment of recent and acute cases of sciatica may be said to be about as follows: The first is that the patient should go to bed and stay there until the acute pain has subsided. Absolute rest is by all means the most important element in the treatment of acute sciatica and the physician who compromises with the patient on this point, is the one most likely to fail in effecting a rapid and complete recovery. It is not sufficient that the patient remain within doors and be allowed to get about the house or lie on a lounge and go to the closet in response to the calls of nature. Rest should be absolute and in bed. The patient soon learns that the pain is less intense

when the knee is partially flexed and this position should be maintained by pillows or sand bags, if it be decided to use dry heat instead of cold as a sedative and antiphlogistic agency.

A most important decision for the patient's physician to make is whether to use heat or cold. The advocates of the first are quite as confident of its superior efficacy as are those of the second. As a matter of fact, the determining factors should be the idiosyncrasies of the patient. An anemic, run-down, irritable woman, who dreads the very thought of cold, will be likely to look forward to the application of dry heat with more pleasure and confidence than she will to ice bags or cold wet applications. Nevertheless if the findings seem to indicate that the sciatica is an expression of an inflammatory state in the nerve itself or in its covering, the feelings of the patient should not be allowed to stand in the way of the application of cold, either in the shape of the chloride or methyl spray or ice bags, from the exit of the sciatic nerve to its plantar distribution. The ice must be applied continuously for several days or even weeks, and should be discarded only when cessation of the pain shows that the inflammatory condition has nearly if not quite subsided.

The plan proposed by Dr. Weir Mitchell of Philadelphia for bandaging the extremity with a thin flannel bandage reaching from the foot to the groin, may be used in connection with the continuous applications of cold. This bandage exerts gentle but firm and evenly distributed pressure, lessens the amount of blood circulating in the leg, and acts as an aid to the antiphlogistic and pain relieving qualities of continuous cold. In cases where there are no evidences that the sciatica is dependent upon inflammation of the nerve or its sheath, and in which there are no especial indications which call for the use of cold, these are best treated by the application of heat. This may be applied by hot compresses or by hot water bottles; but one of the most satisfactory methods is the use of sand encased in long flannel bags. After being heated in an oven they retain their heat for several hours. The leg is bandaged in flannel as described above, and surrounded with layers of cotton or wool, so as to prevent the sand bags from pressing directly against it. Then the sand bags, which have been previously heated, are put along each side of the extremity which they maintain in whatever position is found the most comfortable for the

patient. This measure is especially useful in sciatica caused by exposure to cold and accompanying a rheumatic diathesis.

The hot compress is a most serviceable agent in the treatment of acute sciatica and it often gives great relief; but much depends upon its careful and proper application. Pieces of woolen blanket or flannel two feet square are soaked in hot water and then passed through a clothes wringer, being now ready for application. The part to which they are applied must be thoroughly covered with some oily substance to prevent the formation of blisters and the cloths are removed every twenty minutes. Their application soon causes perspiration, which is enhanced by wrapping the patient in blankets. This should be kept up for about two hours and repeated twice in twenty-four hours. After each application the patient should be washed off in water of 75° F. and a moderate degree of dry heat applied to the leg.

In many cases of acute sciatica, it is unnecessary to employ either heat or cold as described above or in any other way. All that is necessary after putting the patient to bed may be counter irritation by means of the actual cautery applied over the course of the nerve by instantaneous touches or light linear contact from its exit to the lowest level at which the pain is present. This is followed by appropriate dressing, bandaging and immobilization of the extremity. These, with the appropriate internal treatment, will be found all that is necessary in many cases of moderate severity. Naturally it is understood that they may be repeated if necessary. Sometimes the application of dry cups over the course of the sciatic nerve, especially at the sciatic notch and over the seat of the most intense pain, is followed by relief. If the patient is a man of plethoric disposition, the extraction of blood by leeches or by wet cups is extremely salutary, not alone in relieving pain at the time, but in influencing its permanent disappearance.

In addition to these measures, careful attention should be given to the patient's diet and the state of the alimentary canal. The effects of a prompt and vigorous cathartic, and of the adoption of a light and easily digested diet, principally milk, not a low diet necessarily, are often very striking. The necessity of overcoming constipation, particularly in women and in men of sedentary habits, is very great. In the beginning of an acute case the pain may be of such severity that it prevents the patient



from obtaining a requisite amount of sleep and exhausts his nervous energy. A full dose of morphine should be given. After that reliance can safely be placed upon the less injurious pain relievers, such as phenacetin, the salicylates, etc. In cases which are apparently the manifestation of the rheumatic state, sodium salicylate should be given in full doses. The indications for causal therapy should be vigorously sought for. If it can be shown that any of the conditions which have previously been mentioned as causative of sciatica are operative, such as syphilis, malaria, poisoning from lead or arsenic, diabetes, auto-intoxication, or impaction of feces, specific medication should be directed toward fighting it as soon as the general indications for treatment above mentioned have been fulfilled.

The causal treatment should be supplemented by the earnest administration of medicinal re-constructives. It is unnecessary to enumerate them here, and we do not need explicit directions when to give iron, arsenic, cod liver oil. Sometimes insomnia is very troublesome in these cases and measures must be taken to relieve this. This mode of treatment and the above enumerated measures are usually sufficient to cure the majority of sufferers with acute sciatica, whether it be dependent upon true neuralgia or slight perineuritis. This being true, it is astonishing that so many cases of this affliction go on to a chronic state. That they do is beyond question and is mainly due to haphazard treatment and to compromising with the patient regarding the plan of treatment. Some cases, however, are subacute or chronic even from the beginning.

One of the most important things to determine early in the treatment of chronic sciatica is whether or not the patient should have rest. As a general rule, if there are no indications of organic disease of the nerve, activity is much more serviceable than rest. The movements that may be advised are active and passive, the latter being by far the most important. They may be utilized in the shape of massage and resistance exercises. It is very necessary to tell the patient that massage must be done thoroughly and kept up for a considerable time before beneficial effects will be seen; but it should not be relied upon as the sole therapeutic agent. The patient, lying on his belly, should have the entire extremity from the sole to the ilium gently rubbed and kneaded, beginning from above and gradually working

downward to the ball of the foot. If the nerve or its main branches be particularly sensitive to pressure, the massage should at first be very gentle and of short application, never for more than from ten to fifteen minutes and the duration and force used should be gradually increased if the treatment be well borne.

Electricity may be used in connection with massage in the treatment of chronic sciatica and by far the most important form is the static breeze and spark; but like all other therapeutic agents it must be used methodically and persistently. Disappointment will follow almost invariably if the attempt be made to use it otherwise. It should be administered directly over the nerve for a period of from six to ten minutes every other day. Every physician should understand something of the use of water in the treatment of sciatica, for there are few agencies that are more useful in this affliction if properly and vigorously applied. It is impossible to go into the indications for the different baths here.

Acupuncture in the treatment of sciatica is a therapeutic measure that has been donated to us by the Chinese and has been recently praised by some English physicians. It is done in the following way: A single spear-pointed needle, one and one-half inches long, is plunged directly into the trunk of the nerve, especially that part in which there is pain on pressure. There is no difficulty in recognizing when the nerve is pierced, as it is always signalled by sharp pain shooting down the leg. The needle should not be left in for any length of time, because if it is, severe pain will follow its withdrawal.

Before speaking of the methods of employing counter irritation, we must consider carefully the case and whether or no it is a proper one in which to use it. It is especially useful in cases of sciatica following or associated with perineuritis and interstitial neuritis; these are very apt to be improved by counter irritation. Sciatica dependent upon diathesis and lowered states of nutrition should not be treated by this measure unless there are some special reasons for its use. The most expedient way of applying counter irritation is by means of the actual cautery. The course of the nerve having been carefully mapped out by means of manipulation and its location indicated by the mark of a soft lead pencil, the cautery brought to a white heat, is then applied with the greatest possible rapidity, either with short abrupt

touches or by means of slight linear contact over the entire course of the nerve, except at such parts as are not covered by considerable subcutaneous tissue. The entire procedure should not consume more than a few seconds. It is not very painful, and if the burns be dressed the after pain is slight. It is a clinical fact that when the actual cautery is applied to the skin over the nerve of the unaffected opposite extremity, the beneficial effects are quite as evident as when it is applied to the painful extremity. This effect is probably brought about through the sympathetic nervous system. At one time the cauterization of the lobe of the ear was much lauded as a treatment of sciatica. Similar effects to those obtained by cauterization may be obtained by means of blisters produced by mustard or other vesicants applied over the nerve. Counter irritation may be easily overdone in the treatment of sciatica, and there is scarcely any justification for the repeated use of it, providing after two or three trials there is not considerable improvement. Pressure and stretching of the sciatic nerve have been recommended by many writers for the treatment of chronic sciatica.

An Italian physician has adopted a plan which consists of making a severe mechanical pressure in the treatment of the disease, particularly in obstinate forms which are dependent upon a low grade of perineuritis, and has constructed an apparatus by means of which pressure can be applied by the turning of a screw directly to the trunk of the nerve at any given point over which it is fastened. The block or pad that makes the pressure is fastened to a horizontal bar, so that when the apparatus is strapped to the leg the pressure pad can be glided up and down for a considerable distance and pressure made over any point that may be selected. To use this apparatus the patient lies on his belly with the legs extended, the nerve is found at its exit from the sciatic notch and the apparatus applied so that the pressure pad shall come down over the nerve as nearly as possible at this point. The pressure pad is then screwed down until the patient yells, and this compression is kept up for fifteen to thirty seconds. It is then loosened somewhat, but not completely, and slid along the horizontal bar back and forth over the nerve, thus massaging it for three or four minutes. The pressure pad may be applied over other points, especially where there is tenderness or deep seated pressure. Usually the ap-

plication is repeated after an interval of about half an hour and it is recommended to practice it about six times every day and kept up until recovery ensues. The originator of this method makes extraordinary claims for the value of the procedure in the treatment of rebellious sciatica.

Nerve stretching for the treatment of this disease is an old remedy. At the present time the bloodless method is the one that is usually employed. A quarter of a century or more ago it was quite common for the surgeon to expose the sciatic nerves of patients who were afflicted with sciatica which would not yield to treatment and to draw it up with a blunt hook and give it all the tension which he thought would be good for it. Others squeezed the nerve between the fingers or crushed it with forceps, and some went so far as to sever it entirely. These methods are merely mentioned as curiosities. Slight stretching of the sciatic nerve, such as may be obtained by forcibly flexing the affected thigh on the abdomen while the knee and pelvis are kept firmly extended, is sometimes beneficial in cases of obstinate or intermittent sciatica that occurs without apparent cause. This is the same procedure that is occasionally of use to relieve the leg pains of locomotor ataxia. There is absolutely no danger in cutting down upon the nerve for diagnostic and therapeutic aid. There is no doubt that in many instances adhesion of the sheath of the nerve and inflammatory exudate cause a violent form of sciatica and intense disorganization in the nerve which medicinal treatment is powerless to combat. The pressure of the exudate prevents circulation and the dragging and pressure of the adhesions keep up the persistent pain. As a preliminary measure one may attempt to withdraw this exudate from the sheath of the nerve by a hollow needle and afterwards the nerve can be treated as thought best.

The medicinal treatment of chronic sciatica may be disposed of very briefly. There are a few drugs that have not been recommended. It is unnecessary to repeat here what has been said concerning the necessity of searching for the cause of the sciatica and the adoption of causal treatment. The necessity of this is as great in sub-acute and chronic sciatica as it is in the acute variety. The medicines that act in an unknown way and that are given empirically are turpentine, iodide of potassium and arsenic. A very good prescription is for the



emulsion of turpentine, each teaspoonful of which represents three minims of the oil and taken three times a day. When there is evidence of arterio-sclerosis, potassium iodide and nitro-glycerine are indicated.

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## THE TREATMENT OF STATUS EPILEPTICUS.\*

*By Arthur Morton, M. D., of St. Albans, Vt.*

The condition known as status epilepticus is probably the normal termination for most cases of epilepsy. It seems to be the climax of the disease. One convulsion follows another in more or less rapid succession and the patient does not regain consciousness between them. The pulse and temperature are elevated and the patient suffers from severe shock which may prove fatal. Some epileptics have many attacks of "Status," while others die during a single attack. There are many patients who have a series of convulsions, perhaps four or five during one or two hours, but these attacks cannot be regarded as "Status." There is little if any rise in temperature and only slight prostration, and the patient is usually able to be up within half an hour. There is, however, no sharp boundary line between convulsions occurring in series and true status. Patients who habitually have series of convulsions are very apt to develop status at any time.

In the beginning of a typical case of status epilepticus, the convulsions may occur only every half hour, but as the case progresses the attacks become harder and occur at shorter and shorter intervals up to a certain point, when they begin to lessen in severity and frequency, and towards the close of an attack the muscles of the eye and face alone may be involved in the convulsive movements. In these cases it seems as if the cortical cells are so exhausted that they are unable to stimulate the muscles to contract. As the convulsions begin to lessen in severity the patient is usually in a condition of shock. The body is covered with a cold

perspiration, the pulse is rapid and weak, the respirations are rapid and shallow and the temperature frequently rises to 107°. This condition often ends in collapse and death. If death does not take place, a prolonged and tedious recovery ensues, during which the patient is very apt to develop large bed sores.

The first indication in the treatment is to try to abort the attack. Patients who have a tendency toward serial attacks, or who have had one or more attacks of status, should be carefully watched. If such a patient has a convulsion he should be given a large dose of magnesium sulphate, and this should be followed in thirty minutes with 60 grains of potassium bromide and 20 grains of chloral. This will usually abort the attack, but if he has another convulsion his stomach should be washed and the dose of bromide repeated. After an attack of status is fully developed there is a partial paralysis of the gastro-intestinal tract, and frequently medicines given by the mouth have little if any effect. In these cases thorough washing of the stomach will stimulate the absorptive power and peristalsis, and a dose of bromide and chloral given through the tube before it is withdrawn, will generally be absorbed. Gastric lavage is of value in nearly every case. Very often large quantities of food are removed, after which it is not unusual to have the convulsions cease.

Frequently when the drugs are not absorbed from the stomach or when for some reason it is not desirable to give them by the mouth, a high enema may be used with advantage during the earlier part of the attack. The following prescription is often used:

Potassii bromidi .....	gr. c
Chloralis .....	gr. xxx
Amyli .....	3 i
Aquae .....	3 iii

Sig: Mix with equal parts of warm water and give as a high enema.

Various preparations of bromine and the bromides have been used hypodermically. Bromipin, a 10% solution of bromine in sesame oil, is a very good preparation to use. Its chief disadvantage is that it is thick and hard to inject, and abscesses are apt to form at the site of the injection. From one to two ounces should be used. A sterile solution of sodium bromide, 30 grains to an ounce of water, makes one of the best hypodermic injections. It should never be made stronger than this or abscesses will develop. In this strength, however, it is rare to find any inflammatory reac-

\*Written for the VERMONT MEDICAL MONTHLY.

tion following the injection. The patient not only gets the effects of the bromides very quickly, but there is also a stimulating and a marked diuretic effect. The patient should receive from two to four ounces of the solution, or 60 to 120 grains of the salt, within an hour. The best site for the injection is on the back, just below the angle of the scapula. A large antitoxin syringe may be used. It is needless to state that all aseptic precautions should be taken.

Morphine is a very valuable drug in cases of "Status" associated with cerebral congestion, as it not only lessens the irritability of the cerebral cells, but some authorities claim that it lessens the blood supply to the brain. It is a drug that should be used with caution, and not more than a fourth of a grain should be given. The whole dose may be given at once, hypodermically, and it should not be repeated. If the convulsions do not cease some other method of controlling them should be resorted to. The tincture of gelsemium in 10 to 15 minim doses, injected under the skin, acts very nicely in some cases, but it is not a drug to be relied upon. It produces its effects by paralyzing the motor centers of the cord and medulla. To obtain results it ought to be given until ptosis appears. It should be used only in sthenic cases.

If there is much cerebral congestion present an ice cap should be applied to the head and active purgation resorted to. The bowels may be moved if the patient be unconscious by placing two minims of oleum tiglii, diluted with a little sweet oil, on the tongue, or by giving the patient a high enema. Venesection has been tried in many cases, but without results. The fluid extract of ergot sometimes does good in these cases by causing contraction of the cerebral vessels. It may be injected with the sodium bromide solution or separately.

In a few cases of "Status" we find the face pale and the pulse rapid and small. In these cases nitroglycerin and the bromides act very nicely. The nitroglycerin should be given hypodermically every hour in 1-100 grain doses until the face becomes flushed. It is in these cases that inhalations of amyl nitrite often proves beneficial. In a large number of cases the exciting cause is some form of autointoxication. This condition should be treated by causing free diaphoresis, diuresis and catharsis. Diaphoresis is best obtained by placing the patient in a hot pack and applying cold to the

head. A high enema of normal salt solution is used for its diuretic effect. About eight ounces should be injected every three hours. The bowels should be moved by an enema or oleum tiglii.

Chloroform and ether are mentioned only to be condemned. I have never seen the convulsions lessen in frequency or severity from their use, and I have several times seen patients have from one to ten convulsions while under their influence during some surgical operation. Among other drugs which have been recommended, but from which satisfactory results have not been obtained, are agaricin, duboisin and hyoscyamin.

Lumbar puncture has been used in a few cases of status. In some cases it seems to work well. It is, however, quite a serious operation and one the physician does not like to use unless it be as a last resort. I believe, nevertheless, that if it were used early in the case before prostration had become extreme, better results would be obtained. The theory is, that during a case of status, there is developed an increase in the intracranial pressure. This increase of pressure is probably not the cause of the attack. I believe it develops during the first few convulsions, and that it has much to do (probably by pressure on the cerebral cells) with the continuance of the convulsions. There is usually a marked increase of the rate of flow of the cerebrospinal fluid from the needle, thus showing that it is under increased pressure. From 10 to 15 cubic centimeters of cerebrospinal fluid should be allowed to escape from the needle. This is generally followed by a diminution in the severity of the convulsions and very often they cease altogether within fifteen minutes. In one case of status, after withdrawing about 20 c. c. of cerebrospinal fluid, I injected 10 grains of sodium bromide, dissolved in 10 c. c. of sterile water, directly into the subdural space. The case made a good recovery.

Lumbar puncture has been used in cases of uremic convulsions with very good results. There is very little difference between uremic convulsions and epileptic convulsions except, perhaps, in the exciting cause. An eminent authority has objected to this mode of treatment on the ground that by diminishing the intracranial pressure, the support was removed from the walls of the cerebral capillaries, and that this would favor the further transudation of serum through their walls.



In a case of status, after we have controlled the convulsions, we have a very serious condition to deal with. There is usually a temperature of  $104^{\circ}$  to  $107^{\circ}$ . The pulse is very rapid and feeble and the respirations are rapid. Now we must begin to stimulate, as the patient is in a condition of profound shock and apt to die at any moment. The use of the normal salt solution by the rectum should be continued every three hours and the cautious use of strychnine should be begun. Very little food if any should be given for several hours, as the alimentary canal is in no condition to properly digest it. Water in teaspoonful doses should be given frequently by the mouth. If the temperature remains high, cold baths should be used. If the patient lives, a slow recovery takes place.

The patient should be carefully watched during this period for the development of bed sores. His position should be frequently changed and the bed should be kept smooth and dry. If indurated areas appear a bedsore can sometimes be prevented by using hot and cold compresses alternately, changing them every minute for fifteen minutes. This procedure should be carried out three or four times a day.

To recapitulate: The first thing to be done is to move the bowels thoroughly and then put patients into a hot pack. A fourth of a grain of morphine may be given hypodermically. The stomach tube should be used in nearly every case. Bromides and chloral may be given by the mouth or rectum, or the bromides may be given hypodermically, depending on the circumstances. Nitroglycerin should be used hypodermically in case of a pale face and a rapid, small pulse; other means of controlling the convulsions, such as lumbar puncture, the use of ergot, amyl nitrite, gelsemium, etc., being reserved for special cases.

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## PRESIDENT ROOSEVELT'S TUBERCULOSIS ORDER.

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For the purpose of "eliminating and preventing tuberculosis among employees of the public service," the President has personally caused to be issued a set of health rules, which will apply to government servants throughout the country. A thorough inspection of public buildings is to be made by the surgeon-gen-

erals of the army, navy, and the public health and marine hospitals service, and it is required that the name of every person afflicted with tuberculosis be ascertained and that such person be presented with a printed copy of the committee's rules, with the information that the non-observance of them shall, in the discretion of the head of the department, be considered a "just cause for separation from the service." The rules, which form an excellent model for private corporations, are as follows:

All persons in government employ are positively forbidden to spit upon the floors.

Rooms, hallways, corridors and lavatories shall be freely aired and effectually cleaned at least once a day and not during working hours.

Spittoons shall receive a daily cleansing with very hot water, and when placed ready for use must contain a small quantity of water.

Dust must be removed as completely as possible by means of dampened cloths or mops. It should never be needlessly stirred up by a broom or duster, as this practice only spreads the dust and germs.

Floors of tiling, brick or stone must be frequently scoured with soap and water.

The senior clerks in charge of workrooms will take measures to secure during working hours the admission of as much fresh air and sunshine as the conditions will permit.

The use of individual drinking glasses is recommended.

Persons in the government employ who suffer from pulmonary tuberculosis shall, when possible, be separated from others while at work.

Such persons will not be permitted to use the public spittoons, but must provide themselves with individual sputum receivers, preferably of easily destructible material, and carry these with them on arrival and departure. They will be held strictly responsible for the disposal and destruction of their own sputum, so that no other person's health may be endangered therefrom.

Such persons must provide their own drinking glasses, soap and towels, and shall not use those provided for the general use.

Plainly printed notices, reading as follows: "Do not spit on the floor: to do so may spread disease," shall be prominently posted in rooms, hallways, corridors and lavatories of public buildings.

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The Legislative Council of the American Medical Association has adopted resolutions recommending a Department of Public Health be established with a representative in the Cabinet; the repeal of the canteen law; government control of wandering tuberculosis; the regulation of the practice of medicine at Hot Springs, Ark.; bespeaking the influence of the entire medical profession in securing uniform state laws regarding the manufacture and sale of patented and proprietary medicines, and asking the government to exclude from the mails and interstate commerce all remedies the constituents of which are kept secret.

## Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the Medical Sciences.*

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### EDITORIAL.

The meeting of the American Medical Association in Boston next month affords a rare opportunity for physicians in this section to attend a national medical gathering without the expenditure of a large amount of money or time. It is interesting to note that previous sessions have been held in Boston in 1849, the second annual session of the association, and again in 1865, immediately after the civil war. In each of these meetings, Northern New England has been well represented, Vermont and New Hampshire showing a particularly good quota of delegates in the roll call. At both of these meetings, and probably at nearly every such session, if the records were examined, there have been brought up questions of supreme importance to the medical interests of the country, and it is for the national association in its annual session to decide upon the matters which agitate the profession. This year no one doubts that there is business enough to

be passed upon. The proprietary and nostrum evil, the reciprocity of states, the standing and requirements of medical schools and the consideration of sectarian lines in medicine, are only a few of the most prominent subjects which must demand attention.

To the research men in the large cities and colleges, who are in constant touch with all the newest things in medicine, the national meeting may not mean much more than an opportunity to give wider prominence to their findings and conclusions. It is the men who are confined day after day and month after month in one small round of duty, having access to, at best, only a comparatively few books, and reading only two or three journals—it is these men who should attend the national meeting, and take advantage of the larger outlook, the wider scope, the intense enthusiasm and the high tone which such a convention offers. And it is these men who make up the great, great majority of the profession. They are the men to whom the people look in times of need. But this is the time when the physician must consider himself. Every man owes it to his own manhood and his own professional standing to grasp such an opportunity. It increases his enthusiasm in his chosen calling, it raises his ideal in medicine, it gives him a wider range of professional vision by being in contact with the master minds, it removes his thoughts from the ruts and clarifies his mentality, and finally, as the real point of livelihood must be taken into account, it gives him a larger standing in his own community. Those who have attended national gatherings need no urging. To others it may be said that the expenditure of time and money involved is repaid many times over in the material and mental results.

The necessity of protecting school children from the troubles incident to diseased ears and eyes, as well as from actual contagious dis-



eases, has become the subject of legislation in several states, Vermont being among the foremost. The one man, above all others who has worked for and urged on this legislation, is Dr. Frank Allport of Chicago, whose paper on the subject begins in this issue. As Dr. Allport points out, the child with defective hearing or vision is put to a tremendous disadvantage. No provision is made for these unfortunates in school, except as the teacher may recognize their difficulty and give them suitable seats. They appear dull because of their inability to distinguish objects and hear instructions, and are oftentimes made the sport of their fellows, besides being punished at home. Routine examination of the eyes and ears, even if by no other person than the teacher, recognizes the existence of defects and the case is at least reported to the parents with advice to consult a physician. The school authorities can do little more than this. If actual proof were required that such procedure is necessary, one need only turn to the report of the examination in Vermont last fall, when it was found that 34.5 per cent. of all the school children in the state had defects of eyesight or of hearing. Dr. Allport quotes the Vermont law as a model one, including as it does the examination of throats and ears as well as of eyes. The results of the first year are apparent. It is now for the physicians in this state to see that the same procedure is fully carried out each year, and to our readers outside the state we suggest that a united effort at once be inaugurated to endow state and local boards of health with authority to carry out this good work.

In some cases where the stomach is too intolerant against mercury, this drug may be administered in suppositories—either in the form of blue ointment or gray oil. That the mercury is absorbed by the system, there can be no doubt, for the mercury can be demonstrated in the urine and the patient is often readily salivated.—*Alkaloidal Clinic.*

## NEWS AND PERSONAL ITEMS.

*We desire to make this column of personal interest to all.  
Physicians are requested to send news items.*

### VERMONT.

Dr. J. A. Archambault is assisting Dr. C. M. Ferrin in his practice at Essex Junction.

Dr. James E. Hartshorn of St. Johnsbury returned May 1 from Jamaica, W. I., where he has been for a month past.

Dr. J. N. Davis, a graduate of the University of Vermont College of Medicine has recently changed his location from Kelly, Kansas to Laclede, Kansas.

Dr. C. A. Cramton of St. Johnsbury has returned from Jamaica, W. I. He spent most of the time while there at Port Antonio and Kingston. His health is fully restored.

Dr. John M. Allen of St. Johnsbury is in New York, taking a course in eye and ear work, and intends to locate in Rutland when he returns.

Dr. A. F. A. King of Washington and Dr. A. O. J. Kelly of Philadelphia have begun their lectures at the medical college. Dr. Kelly will hold clinics on Tuesday and Friday mornings during the remainder of the term. Dr. A. R. Shands of Washington is now lecturing on orthopedic surgery. Dr. G. R. Pisek has finished his lectures on pediatrics and returned to New York. Dr. W. L. Wasson of Waterbury, Vt., is lecturing on mental diseases.

Dr. L. B. Newton, one of the leading physicians of Bennington County, died at his home in North Bennington, April 25, after an illness of three days of pneumonia. Dr. Newton was born in Jackson, N. Y., in 1839. He graduated from Castleton Medical College about 1859 and has practiced in North Bennington since. In 1873 he helped found the Bennington County and Hoosick Valley Medical Society, now known as the Bennington Medical Society, and served almost uninterruptedly as secretary until two years ago.

### NEW HAMPSHIRE.

Dr. William E. Reed of Nashua and Miss Elizabeth M. Hankin of Saxonville, Mass., were married May 2. Dr. Reed is city physician of Nashua.

An epidemic of typhoid fever is reported at Berlin, and late last month there were said to be at least 125 cases in the city. Several sources of water supply have been condemned, and analyses have been made of milk and other possible sources of infection. The board of health and the local physicians are working together, and at last reports the epidemic seemed to have abated somewhat.

The new hospital at Exeter was opened for inspection last month, and is now ready to receive patients. The building and grounds occupy about two acres of land, the money used having been raised by public subscription. The hospital is built of brick with white mortar and granite trimmings, and consists of a two-story administration building with wings at either side. The main building is 35 feet long, the northern wing, which contains the wards, 98 feet, and the southern wing, 35 feet. The wards are large, with sufficient light and are heated by indirect heat. The southern wing contains the operating room, which is finished in white enamel, etherizing and sterilizing rooms and a surgeon's dressing room.

The 150th anniversary meeting of the New Hampshire Medical Society will be held at Concord May 17 and 18. The papers set for the meetings are particularly interesting, among the speakers being, Drs. R. E. Gallinger of Concord, L. M. Keene of Ketterly Point, Me., F. Von Tobel of Lebanon, C. F. Ober of Manchester, R. G. Blanchard of Dover, N. H. Scott of Wolfeborough, A. M. Fernald of Sutton, J. W. Coolidge of Bristol, C. E. Hight of Milan, T. W. Luce of Portsmouth, E. F. McQuesten of Nashua, J. M. Gile of Hanover, W. J. Beattie of Littleton, J. S. Brown of Manchester, A. E. Grant of Durham, A. W. Fairbanks of Boston, Mass., and R. H. McConnell of New York. The annual meetings of the Alumni of Dartmouth Medical College, and of the New Hampshire Association of Military Surgeons will be held in connection with this session.

#### MASSACHUSETTS.

Dr. Edgar L. Draper, 64, one of the oldest physicians of Holyoke, died at his home May 6, after a short illness. He was a graduate of Amherst College and Harvard Medical School, class of 1876, and during the civil war he was a surgeon in the navy. He had practiced in Holyoke for 30 years.

Dr. Lawson A. Long, a pioneer of medical practice in Holyoke, died May 6, at the age of 78. During his long career as a practitioner of

medicine in Holyoke, New York City and Buffalo he was a keen observer and his work in connection with cholera in the late 40's was considerably in advance of his time.

#### MAINE.

Dr. S. E. Wentworth of Auburn, who died April 10, was born in Limington, Me., 69 years ago. He was graduated from Bowdoin Medical School in 1868, began the practice of medicine at Lovell, later moving to Brownfield, and coming to Auburn 32 years ago, where he lived ever since.

Dr. M. C. Wedgewood of Lewiston died April 9. He was born in Bowdoin, Me., in 1832, and received his literary education at the Litchfield (Me.) Institute, graduating from the Bowdoin Medical School in the early 50's. During the war he served as assistant surgeon, and afterwards went to Lewiston, where he has since been in practice. In 1897 he was president of the state medical society and has served in several political offices.

### AN EPITOME OF CURRENT MEDICAL LITERATURE.

#### THE PROPRIETARY QUESTION.

*Synopses of The Journal A. M. A. symposium of May 5.*

#### PROPRIETARY MEDICINES.

G. H. SIMMONS, Chicago, discusses some general considerations of this subject. He calls attention to the fact that proprietary medicines are generally mixtures controlled by copyright or trade names, and are often secret or semi-secret in character. He states that while there is no objection to proprietary preparations *per se* the commercializing of the literature relating to *materia medica* is against all true scientific spirit and is demoralizing to both pharmacy and medicine. He explains in detail the difference between "patent" and proprietary medicines. Dr. Simmons says that whatever is secret is suspicious, and states that secrecy and mystery are the bulwarks of quacks and charlatans. He declares that a physician not only has a right to know what he is giving his patient, but that he has no moral right to prescribe a preparation of which he does not know the exact composition. He refers to the need of legislation on this subject and to the necessity for examination of various medicines and foods. He discusses the reliability of manufacturers and the exaggerated statements made by some in regard to the articles manufactured by them. He concludes: "The nostrum evil has grown until it is a curse to our profession. The use of proprietaries has become so common that the intelligent prescribing of well-known official drugs in their simpler form by many intelligent practitioners has become a lost art. The literature of the proprietaries has developed in many physicians an optimism and a contended spirit that has checked intelligent thought, independent action,



and an ambition to progress. The proprietary business has cast a blight on our literature, debauched our medical journals, checked advance in scientific methods of treatment, and suborned the art of prescribing to the aggrandizement of commercial promoters. Can we not rid our profession of at least a part of this blight?

#### SUBORDINATION OF MEDICAL JOURNALS TO PROPRIETARY INTERESTS.

J. H. SALISBURY, Chicago, states that it is difficult to overestimate the influence of medical journalism on the opinion and action of the medical profession. Whoever, he says, gains control of the medical press goes a long way toward securing a paramount influence on the entire medical profession. He calls attention to the fact that an extensive influence may be assumed by the fact that most medical journals are dependent on their advertising, and while this is to be deplored it is nevertheless an important factor to be reckoned with in considering the subserviency of the medical press and in suggesting a remedy for the evil. Dr. Salisbury states that he went through 27 medical journals covering the past six years, and found one preparation the subject of 45 original articles. In addition, he states, there were six editorial endorsements of the same preparation. He states that the result of cramming the reading pages with one-sided articles of this kind is to create an uncritical habit of mind in the reader and to encumber the journal with worthless stuff. He declares that a journal which is willing to sell its pages is not to be relied on to give its readers the best editorial advice or to take a firm stand on the right side, when the interests of the public or its subscribers are opposed to the proprietary interests. In discussing the remedy for this condition, Dr. Salisbury says: "If, instead of inserting in his reading columns concealed advertisements of proprietary remedies, the space were devoted to lessons on pharmacy and chemistry, the editor might educate his readers to a point where they could rationally decide on the true value of the novelties proposed for their use without making disastrous experiments on their patients. The editor who fails to protect his readers against concealed frauds, which is the only proper characterization for many of these 'write-ups,' is false to the trust reposed in him by the medical public."

#### EFFECT OF PROPRIETARY LITERATURE ON MEDICAL MEN.

N. S. DAVIS, Chicago, calls attention to the evil effects of medical advertisements, written as they are to sell the goods and not, as a rule, to state the complete truth, even about the really worthy and scientific preparations. Ready-made prescriptions lead to slovenly therapeutics, and if all members of the medical profession would refuse to employ ready-made mixtures they would destroy one of the greatest hindrances of rational therapy. Most of us are inclined to accept new things and new ideas without sufficiently testing them or demanding the approval of recognized authorities, and the advertising methods used almost force them on us. The remedy, he states, lies first, in recognizing the condition; second, in insisting that the teacher of pharmacology and therapeutics in medical schools should be confined to the drugs of the pharmacopeia; third, we should take more interest in the pharmacopeia and insist on its containing only drugs of recognized worth and on its revision often enough to include all valuable new ones. Finally, he declares, pharmacologic and therapeutic research should be stimulated.

#### THE NOSTRUM FROM THE PHARMACISTS' VIEWPOINT.

W. A. PUCKNER, Chicago, considers defective teaching of pharmacy, materia medica, etc., in medical schools by imperfectly informed instructors, to be the direct cause of the present conditions as regards nostrum prescribing. The prescriptions of the newly-graduated physician are likely, therefore, to be unsightly, nauseating and sometimes, because of incompatibilities, inert. Realizing his disability, the young physician, therefore, is likely to fall back on the ready-made proprietaries. As a striking example of how some physicians are taken in, Puckner relates the case of one man who for years prescribed as quinine a fake nostrum that was really only powdered calcium sulphate. The advertising methods of manufacturers are illustrated by a quotation from the instructions given by one house to its travelling salesmen, which do not indicate any very respectful estimate of the therapeutic knowledge of a certain class of physicians. The use of proprietaries by the physician also breeds a lack of confidence on the part of the patient, leading to self-medication or druggist's counter prescribing. The use of "physician's samples" has also a bad effect. Patients sooner or later come to learn what they are taking, and the physician prescribing proprietary remedies is thus really the advance agent of the "patent medicine" sold directly to the public.

#### THE PROBLEM OF THE SYNTHETIC COMPOUND.

J. STIEGLITZ, Chicago, states that the problem of the enormous increase of the new synthetics is one of the most serious before the profession. Admitting the commercial or mercenary reasons for their production, he holds that there is a service to be done to humanity and a rational, legitimate ideal to be attained. While the progress has been comparatively slight, consisting for the most part in the production of a few more or less useful antipyretics, some hypnotics, some modifications of alkaloids, and a few more advanced preparations, the chemical successes in other lines, such as in the manufacture of the anilin dyes, teaches a lesson of patience and of hope for the future. The problem is a complex and important one, but he does not see why we should not even attain to the chemical preparation of those specific antitoxins which we now draw from animals, at some time in the future. The main point of his remarks, however, is that there is need of some scientific standard or measure for the impartial sifting of the good from the bad in these synthetics, of some institution, perhaps international, or some central bureau of critical disinterested review.

The need of a check on the great manufacturing houses is illustrated by him by quotations of deceptive chemical nomenclature, though technically truthful, covering what are practically mixtures as rank as any of those recently exposed by the Council of Pharmacy and Chemistry of the American Medical Association. Physicians should insist, he thinks, that all chemical compounds whatever should pass before some reviewing board which will insist that the manufacturers give the truth, the plain truth and nothing but the truth.

#### RESPONSIBILITY OF THE MEDICAL TEACHER.

C. S. WILLIAMSON, Chicago, considers the medical teacher to a certain extent responsible for the unfortunate condition of things as regards therapeutics. The subject has been taught in too vague and general a way and subordinated unduly to pathology and diagnosis. The subject is essentially one of detail and should be thoroughly and minutely treated in the teaching. It has also been often presented at the

wrong psychologic moment and not in direct relation with the subject of practice. The medical teacher also has often failed to give students due warning of the actual situation as regards nostrums, and thus fails properly to fit them for the conditions they will meet. The nostrum vendor takes advantage of the situation and sends out his preparations, with full details as to their uses and management, so that they are the more readily utilized by the young physician who has been taught mere general statements.

#### HOW TO SECURE PURE MEDICINES.

J. H. LONG, Chicago, attributes the nostrum evil of the present day to the advertising mania that has taken possession of the country. Its cure is to be found, he thinks, in creating a correct sentiment among the publishers of medical journals. They have a special responsibility for the character of their advertisements, greater than that of ordinary publishers, and their inconsistencies in this indicate a peculiar conception of medical ethics on the part of some of them. He sees a remedy also in the work of the Council on Pharmacy and Chemistry of the American Medical Association, from which good results have already been obtained. Its work is necessarily slow because it must, first of all, be accurate and must discriminate carefully between the good and the bad. Legitimate medicines have nothing to fear from its labors, but trash, hiding behind false descriptions, must be brought to light.

#### MEDICINE.

##### INFECTION THROUGH THE TONSIL.

ADLER (*N. Y. Med. Journal*, March 31, '06) considers the relation of the tonsils to certain diseases. By far the most frequent infection of tonsillar origin is rheumatism. That the bacterial infection enters the system, possibly in a majority of cases, through the tonsils, that acute articular rheumatism, endocarditis, pleurisy and other forms of streptococcus disease are thus introduced, is at present a generally accepted fact. Infection is not necessarily introduced by the common form of follicular tonsillitis, with more or less high temperature. On the contrary, it often appears as if an intense inflammatory reaction served rather as a preventative of general systemic infection. Many cases of muscular rheumatism are also of tonsillar origin, and it is quite probable that certain forms of pneumonia, streptococcus, as well as pneumococcus, have their origin in infection through the tonsils. Pneumococci are frequent inhabitants of the normal tonsil. General and severe septic infection may take its origin in tonsillar disease, several cases being reported of fatal sepsis following tonsillitis. Of especial interest is the relation of tonsillitis to nephritis. The form thus instituted is usually designated as desquamating nephritis. There is no edema, no vomiting, no headache, in fact no subjective or objective symptoms except those contained in the urine. In the majority of cases the nephritis disappears with the tonsillitis, but sometimes it does not disappear and persists for a long time. The author does not advocate the methodical eradication of every tonsil, but urges radical measures whenever the tonsils show signs of disease.

##### SOME EVILS OF MOUTH BREATHING.

LINHART (*Columbus Medical Journal*, April, '06) finds that with scarcely an exception patients suffering from chronic pharyngitis and laryngitis have more or less difficulty in inhaling sufficient air through the nose. This is particularly noticeable

when exercising briskly out of doors, during the cold and damp seasons. Very young children have little difficulty in breathing through the nose. It is only in later childhood, subsequent to the hypertrophy of the adenoids and tonsils, that children begin to breathe through the mouth. Habits of living, in overheated and ill-ventilated rooms, and too heavy clothing with subsequent changes when going into the cold air, are probably a strong factor in bringing about congestion of the mucous membrane and underlying tissues of the turbinates in the nose. One of the probable evils of mouth-breathing in early life is the raising of the palatine arch by undue pressure from inhalation of air. This encroaches upon the nose space and causes the septum to be deflected to one side. This high arching is also responsible for the peculiar shaping of the face, seen in children with adenoids. The mouth breather, lacking the protection of the bactericidal secretion of the nose, is more susceptible to infection and on account of discomfort will not inhale as deeply as he ought. Considerable disturbance to digestion is caused by allowing the muco-purulent material from the vaso-pharynx to get into the stomach. The author recommends cool, well-ventilated rooms, cold bath, especially for neck and spine, dry clothing, simple foods, regular habits, moderate daily exercise, and always breathe through the nose.

##### EARLY DIAGNOSIS OF TUBERCULOSIS.

JOHN B. HAWES, 2d (*Boston Med. and Surg. Journal*, April 5, '06) discusses the early diagnosis and the aggressive treatment of pulmonary tuberculosis in a large out-patient clinic, with special reference to the harm done to cases of phthisis by the treatment ordinarily given. He reaches the following conclusions: 1. By waiting until the diagnosis of tuberculosis is proved by the demonstration of tubercle bacilli, those in charge of out-patient clinics are sometimes responsible for the death of the patient. 2. Careful temperature records by the patients themselves, the use of tuberculin, mensuration and spirometry assist us to recognize the disease in the closed stage, i. e., before bacilli appear in the sputum. 3. Of supreme importance both for the early diagnosis and efficient treatment of these cases, is an aggressive personal interest on the part of the physician; he must himself take the initiative, educate and encourage the patient and hustle for his future good, even when the patient himself is listless and indifferent.

##### PROPHYLAXIS OF LOBAR PNEUMONIA.

ANDERS (*Am. Medicine*, March 31, '06) discusses this subject and states that implantation may result from the migration of the pneumococcus contained in the secretions of the upper air passages down to the alveoli, from the inhalation of particles of dried pneumonic sputum floating in a dusty atmosphere. The question of individual predisposition is also a point of importance. From these facts he deduces that effective prophylaxis embraces four main objects: (a) The thorough disinfection of pneumonic sputum as well as that of healthy persons, including the secretions from the upper air-passages; (b) isolation of the patient, especially from the debilitated, and the disinfection of the sick chamber, together with its contents, after death or recovery; (c) removal of personal predisposition, by habituation of the body to cold air and cold water, use of tonics during winter and spring, removal of nasal obstruction, regulation of diet; (d) introduction of public measures, issuing documents regarding the disease, prohibition of spitting in public places, and care in cleaning and sprinkling of streets.



## USE OF OVARIAN EXTRACT.

L. L. ROOS (*Post-Graduate*, April, '06) reports three cases in which ovarian was given with success. Two cases were of salpingo-oophorectomy, one single, one double. Both had marked nervous symptoms accompanied by flushes. The dose of ovariin was grn. vi, three times a day, and improvement began at once with subsequent cessation of symptoms. The third case was of exophthalmic goitre, with well marked enlargement, exophthalmos and cardiac involvement. Well shown the patient was in practically normal condition.

## NON-SURGICAL TREATMENT OF PROSTATE.

J. HENRY DOWD (*Buffalo Medical Journal*) writes on hypertrophy of the prostate with retention. The most important causes of retention, accompanying hypertrophy, are wetting of the feet, chilling of the body and undue nervous excitement from any cause, but especially sexual excess. He summarizes his treatment as follows: (1) Stop all local medication; (2) calomel, grs. ii, followed by a saline in three hours, and this can be repeated on the third day; (3) at least six leeches to the perineum, close to the sphincter; (4) after the leeches fall, place the patient in a hot sitz bath for 15 minutes; (5) two or three days after the discharge has reappeared, resume local medication, being careful that no solution enters the posterior urethra. It may be found necessary to use the catheter after the leeches have been used. No instrument should ever be thought of except one having the Mercer curve, and even this should be used with the greatest care.

## THE PARASITISM OF THE TUBERCLE BACILLUS.

THEOBALD SMITH (*Journal A. M. A.*, April 23 and May 1) finds from his studies on cattle that there are three main portals of entry of the tubercle bacillus into the system, the upper air passages, the lungs and the small intestines. Infection by other routes, such as the skin, is very exceptional. The lodgment in the lymph nodes is accomplished without any apparent lesion whatever, and the nodes act as temporary barriers to the progress of the infection. The tendency is to the formation of a quiescent focus—the tubercle. There is probably some element in the blood that, together with the stimulating influence of the bacilli, provokes the protective cell proliferation. The bacilli, when set free from a discharging focus are provided with an inert protective envelope, which is destroyed by the normal tissue fluids. When this happens they are able to multiply, but this multiplication stimulates cell proliferation, and, according to the activity of this process, multiplication is checked. The bacilli are destroyed in part; the rest, through the protecting influence of caseation, remain latent, provide themselves with the protective envelope, and if discharged outward are able to infect another individual. The question of the possibility of producing a specific artificial immunity toward the tubercle bacilli is discussed at length by Smith, who thinks the best results in protective inoculation will be obtained with the use of bacilli killed at a low temperature and from fresh cultures, which can be made at any hospital or sanitarium. These can be injected locally, each injection forming a new radiating focus of immunity, and the fresh culture insuring a more effective preparation. The tendency of infectious diseases, he holds, is towards a balanced parasitism, with reduced mortality, but not necessarily a reduced morbidity. This is due to selective adaptation of both the host and parasite, and this selection will, he believes, go much farther, and we may yet have a

type of tubercle bacilli producing only a bronchitis. There are already some indications of this. The effect of a possible immunization of the human race is open to question. Immunization, Smith says, would be an admission that the germ has come to stay, and merely increasing our resistance to the prevailing type would lead eventually to the selective production of more virulent types and a slackening of the usual preventive measures that might eventually cause disastrous effects from the newly-developed more virulent organisms.

## SURGERY.

## SOME POINTS IN ANESTHESIA.

R. H. M. DAWBARN, New York City, (*Journal A. M. A.*, April 21) offers several suggestions regarding major anesthesia. In case ethyl chlorid is used as the beginning of ether anesthesia, and the Clover air bag is employed, he advises putting into the bag two of the 10 c. c. tubes of ethyl chlorid with easily broken drawn out tips, wrapping them in a gauze sponge secured by an elastic band, and then, with the face piece in position, breaking the tip of one through the rubber bag. If this is done, the anesthesia is commenced without any such waste as would follow first breaking the tube and dropping it into the bag. Usually it will not be necessary to break the second tube. He believes the re-breathed lung-warmed ether in the Clover air bag is much less likely to cause ether pneumonia, besides being much more economical. The second point emphasized is the hanging up near lighted lamps or gas jets, when chloroform has to be used, of cloths wet with ammonia. The resultant chemical affinity produces ammonium chlorid and prevents the irritation from the freed chlorin. The third point refers to the administration of an anesthetic during natural sleep. Dr. Dawbarn advises, in case of a child, selecting the usual hour for its daily sleep, entering the room noiselessly, and administering the anesthetic cautiously. The fourth point mentioned is regarding the common advice to remove all artificial tooth plates. He thinks that there are some exceptions to this rule: When the plate is large and the pharynx of only ordinary size, swallowing or choking with the plate in position is out of the question, while if it is removed the cheeks and lips may fall in so as to interfere with the breathing space, especially if there is coexisting nasal obstruction.

## POST-OPERATIVE DIET.

HOTCHKISS (*Brooklyn Medical Journal*, April, '06) suggests that feeding, except where contraindicated, begin four hours after operation. Diet should be begun on teaspoon sips of water, as hot as can be borne, every ten minutes for two hours. This relieves thirst in a degree, and tends to soothe the irritated stomach. If no emesis occurs, milk and lime water may be begun, half an ounce every hour. If this is well borne increase the amount gradually, and lengthen the intervals, allowing for sleep and proper periods of rest for the stomach. The second day's feeding may include the first, adding broths, tea, coffee, soft toast, eggs, and in general a limited quantity of soft food. There being no contraindications, full diet of solid foods may be allowed in reasonable quantity with a leaning towards a preponderance of soft foods. Adenoid and tonsilomies, together with cleft palate, opening the œsophagus or extirpation of larynx require (advised by some) special diet. Avoidance of hot, salty or seasoned foods is more comfortable for the patients. In the more

serious operations, withhold all food and drink from the stomach for longer periods, varying from 12 to 90 hours. It is good practice to wash out the stomach of many cases of abdominal section before leaving the operating table. Diet in genito-urinary cases is very important and should be absolutely bland. Wash out the kidneys with saline enemata or ingestion of quantities of plain water, but do not stimulate. The opposite is true for cases of fluid collections in cavities.

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BOOKS AND PAMPHLETS RECEIVED.

- A Case of Epithelioma of the Face, treated by the actual cautery, the X-ray and by incision. By J. H. Woodward, B. S., M. D., New York.
- Subcutaneous Pelvioureteral Lumbar Implantation, in lieu of ureterectomy after nephrectomy. By A. Ernest Gallant, M. D., New York.
- Nephropexy, Pro and Con. By A. Ernest Gallant, M. D., New York.
- The Gynecologic Bladder. By A. Ernest Gallant, M. D., New York.
- The Treatment of Empyemata of the Maxillary Sinus Through the Nose. By George L. Richards, M. D., Fall River, Mass.
- The Non-Operative Treatment of Chronic Otitis Media Purulenta, with special reference to the use of Pyoktanin. By George L. Richards, M. D., Fall River.
- The World's Anatomists. By G. W. H. Kemper, M. D. Published by P. Blakiston's Son & Company, Philadelphia.

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CONVULSIONS IN CHILDREN.

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Dr. Grant McDonald, in *The Leucocyte*, Feb., 1906, writes on this subject and quotes the following description of a typical infant convulsion: "When a fit comes on, the muscles of the face twitch, the body is stiff, immovable, and then in a short time in a state of twitching motion; the head and neck are drawn backward, and the limbs are violently flexed and extended. Sometimes these movements are confined to certain muscles, or they are limited to one side. At the same time neither consciousness nor sensation is present. The eye is fixed and does not see, the finger may pass over it without winking, the pupil is immovably contracted or dilated. The ear is insensible even to loud sounds; the pulse is small, very frequent, often too small and frequent to be counted; the breathing hurried, labored, irregular; the skin bathed in abundant perspiration. After this condition has lasted for a minute, or ten minutes, or an hour or more, the convulsion ceases, and the child either falls asleep, or lies for a short time as if it were bewildered, or bursts out crying, and then returns to its senses, or sinks into a state of coma, in which it may be perfectly motion-

less, or twitching of some muscle may continue; or lastly, it may die in the fit."

When one is called to see an infant in a fit, the suddenness of the summons, the perturbation of the friends, the impossibility of examining the child fully at the time, and the large number of possible causes of the seizure, combine to make the diagnosis of the case very difficult. If the child is still in the throes of the convulsions when you arrive, the first thought that comes to your mind is, what is to be done to ease the child and also the minds of the friends and anxious parents? If the fit is of short duration, or if the patient is in a very feeble state of health, no treatment may be desirable. Generally, however, it is customary and beneficial to put the child into a warm bath, with or without mustard in it, or into a mustard pack, which has the advantage of requiring less movement of the patient. In preparing the mustard pack, mix thoroughly a tablespoonful of mustard in a quart of warm water, dip into it a towel, and wrap it around the infant, cover it with a blanket and leave it on for 10 or 15 minutes. Such measures are often all that is required.

If, however, the seizure lasts longer than ten minutes, or if they recur at short intervals, more active treatment is called for. Under these circumstances chloroform may be administered, which is quite safe, and generally succeeds in quieting the convulsive movements. Chloral hydrate is another reliable and effectual remedy, but as the child is unable to swallow at the time, it must be administered subcutaneously, or into the bowel, through a rubber catheter. Two or three grn. may be dissolved in a little water and boiled to sterilize it, then administered hypodermically, or 5 grn. may be administered, per rectum, for an infant of six months, or 10 grn. for one a year old. Morphine is a very effectual drug in these cases, giving 1-24 grn. hypodermically, to a baby one year old. If this amount has no effect it may be repeated in twenty or thirty minutes.

While the child is being treated, the parents are sure to ask: Will it prove fatal? With regard to this question, we may comfort them by assuring them that it is very rare for a baby to die in the first convulsion, unless the child is in an extremely exhausted state, or has a serious intracranial condition such as cerebral hemorrhage; or if there is a laryngeal spasm, or a failure of the respiration sets in, which



is probable in feeble, rickety children. Under these conditions or from rapidly recurring attacks, death may occur without the child recovering consciousness. One attack of convulsions is very apt to be followed by another, for the occurrence of the first one usually reveals a peculiar susceptibility of the nervous system, and each succeeding attack may come from a less powerful exciting cause than the previous one.

Among the most important causes of convulsions are rickets, inherited nervous constitution, anemia, malnutrition, syphilis, disturbance of nutrition, or debility from any acute disease. In almost every case of serious organic disease of the brain there may be convulsions at some stage. Certain fevers may also begin with convulsions. An exciting cause is the presence in the stomach or intestines of undigested food, known as autotoxemia.

There can rarely be any difficulty in recognizing an attack of convulsions. The difficulty consists in determining which one of the many causes is to blame for the fit. Therefore, we must consider carefully the real cause before we begin the general treatment. One of our first guides is the patient's age. When convulsions occur in a new-born babe, we naturally suspect them to be due to some injury received during birth. In many cases of difficult birth, as breech presentation, forceps delivery, protracted labors, there is intracranial hemorrhage, and if situated about the base and in large amount, it is generally fatal, but if over the vertex it may be very large without causing death. In these cases fits generally occur before the end of the first fortnight. The history of such a case will usually aid us in our diagnosis. The next condition in which age is considered is epilepsy. In infancy epilepsy is certainly the least probable diagnosis; here also we must rely on history of previous attacks, the outset being very sudden with a cry or fall, biting the tongue, a tonic spasm before the clonic, etc. Perhaps before these questions have arisen in our minds we have noticed the patient has a very high temperature, and we proceed to take its temperature per rectum; or we may have noticed a distended abdomen; these together with history of overfeeding or injudicious feeding may lead us to make a diagnosis of auto-toxemia, or the onset of pneumonia, scarlet-fever, malaria, or some other acute disease, which can only be deter-

mined by carefully watching the patient's symptoms for 24 or 36 hours. Examination of the urine should never be omitted in cases of doubtful origin. Dentition and worms should be considered among the least probable, never as the most probable, of reflex irritation. In obscure cases rickets should always be suspected as an underlying cause, and the child should be examined for other evidences of that disease.

Convulsions occurring in brain disease, except in acute meningitis, are not as a rule accompanied by any marked rise in temperature. If there are convulsive movements without loss of consciousness there is probably a cortical lesion present. Should the fit be followed by prolonged stupor, this points to organic disease of the brain or membranes. If the seizure consists of a very slight passing loss of consciousness—a sort of petit mal—this in children as well as in adults often indicates serious organic disease of the brain.

Prognosis depends upon the age of the patient, its endurance, and the cause of the convulsions. In idiopathic and reflex cases it is generally good, unless the child is very young or rickety, then we must be somewhat guarded, as these infants are usually very feeble, and may, after recovery from the fits, die from some mild intercurrent disease. If there is reason to suspect intracranial hemorrhage, the prognosis must be extremely guarded. Uremic convulsions, while always grave, yet if recognized early, do not necessarily prove fatal. Convulsions from pertussis and asphyxia are especially fatal. But the attack at the outset of the exanthemata, pneumonia or auto-toxemia are not often grave and seldom fatal.

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An inexpensive and efficient aspirator may be devised as follows: A 5-pint bottle is fitted with a rubber cork, through which passes a glass tube to which is attached an aspirating needle. When wanted for use, 3 drams of alcohol are poured into the bottle, and the bottle is rotated and tilted so that the fluid will wet every portion of the bottle; the excess is then poured out. The alcohol is then ignited, and as the flame reaches the bottom of the bottle, the cork is inserted, and the rubber tube is clamped across with a pair of hemostatic forceps. This furnishes sufficient vacuum to aspirate any safe amount of fluid. The entire apparatus will not cost over 50 cents.—*Medical World*.

## SOCIETY MATTERS.

## OBITUARIES.

Read Before the Vermont State Medical Society, at its Last Annual Session.

*By F. T. Kidder, M. D., Woodstock.*

Edwin B. Mack was born in Woodstock, Vt., on March 19, 1862. He was the son of Alonzo Shaw and Maria Pelton Mack. The Mack families of this town were all descended from John Mack, who settled in Connecticut in 1687, having migrated there from Scotland. Edwin Mack attended the public schools of his town as a boy, and completed his preliminary education at the Green Mountain Perkins Academy, at South Woodstock, which was then one of the best preparatory schools of the state. After leaving there he entered the office of Drs. Richmond and Sherwin in Woodstock, and entered the Medical Department of the University of Vermont in 1884, graduating in 1887. He soon entered upon the practice of his profession in Woodstock, although he did not open an office there, but did work about the country near his father's residence. He then moved to Bridgewater, Vt., where he stayed only a short time and then went to Wilder, Vt. After a short time he moved from there to Newport, N. H., where he stayed for two years, and then went back to Wilder and remained one year, when he went to West Hartford, Vt. He practiced his profession there for nine years, doing a very good business there and in the surrounding towns. In the spring of 1901 he opened an office in Woodstock and continued his practice there until his death, which occurred on March 9, 1904. He married during his stay in West Hartford, Miss Mary Elizabeth Hazen, who survives him. He was a very conscientious, hard-working man, and his death was no doubt hastened by his devotion to his duty. He had an attack of inflammatory rheumatism, and not giving up to it, he took cold and immediately developed a very severe pericarditis, from which he died in a few days. He was very happy to get back to his native town to live, where he was well known, and left a large circle of friends and patients to mourn his early death.

"He has solved it, life's wonderful problem  
The deepest, the strangest, the last,  
And into the school of the angels  
With the answer forever has passed.

How strange he should sleep so profoundly,  
So young, so unworn by the strife,  
While beside him brimful of life's nectar  
Untouched stood the goblet of life.

Men sleep like that when the evening  
Of a long weary day droppeth down,  
But he wrought so well that the morning  
Brought to him the rest and the crown."

DR. WILLIAM R. HUTCHINSON.

*By W. R. Giddings, M. D., Bakersfield.*

Dr. William Robert Hutchinson was born in North Hero, Grand Isle County, Vt., on Dec. 16, 1824. At an early age he became self-supporting, working on the farm and teaching in the schools of his native and surrounding towns. He received his preliminary education at Monkton, Vt., studied with the late Dr. George E. Stone of Monkton, and was graduated from Castleton Medical School in the class of 1848. He commenced the practice of medicine in Enos-

burgh in September, 1849, and continued in active practice in Enosburgh for 26 years. Then in 1875 he removed to Enosburgh Falls, where he died Nov. 25, 1904, and was buried with Masonic honors by Lafayette Lodge of Enosburgh Falls, of which he had been a member for many years. Dr. Hutchinson was married in 1849 to Miss Selinda Smith of Monkton, who, with two sons, Dr. W. W. Hutchinson and Dr. F. S. Hutchinson, both of Enosburgh Falls, survives him.

Dr. Hutchinson was a thorough student, a deep thinker, possessed of excellent judgment, and was an eminently successful practitioner for over 50 years. He was a man highly esteemed by his fellow-townsmen, having held the office of Town Clerk for many years, being twice elected to represent his town in the State Legislature and twice representing his county in the State Senate; and yet, his life was spent among the sick, and all his energies were devoted to his calling. He was attentive, kind and sympathetic and his memory is held in affectionate remembrance by a large circle of those among whom he lived, and especially among those physicians who were intimately associated with him while he was in active practice.

DR. ERASTUS PHILO FAIRMAN.

*By S. E. Darling, M. D., Hardwick.*

Dr. E. P. Fairman died at his residence in Hardwick, Vt., April 6, 1904, aged 75 years. Erastus Philo Fairman was born in Albany, Vt., July 15, 1828. He was educated in the academies at Derby, Craftsbury and St. Johnsbury; was graduated from the College of Physicians and Surgeons in New York city in 1854, and immediately afterwards began the practice of his profession at North Troy. On Feb. 29, 1864, he enlisted as a private in Co. C, 17th Vermont Volunteer Infantry; was commissioned as an assistant surgeon April 9, 1864, with rank of second lieutenant in the 9th Volunteer Regiment, and served until the close of the war. Returning to Vermont, he located in Wolcott, where he acquired an extensive practice. He always took an active interest in local, state and national politics, and was a staunch republican. He was elected to various offices; was sheriff of Lamoille County in 1860-1, and was representative to the State Legislature in 1874-5. He spent several months of each year from 1878 to 1882 in taking a post-graduate course at the College of Physicians and Surgeons.

Dr. Fairman moved to Hardwick in 1890 and purchased the old hotel property on Main street, where he has since resided. This house he entirely rebuilt and remodeled. In 1852 he married Laura Elmira Hubbell, who died in 1859. Sept. 29, 1861, he married Eliza Cornelia Bailey of Berlin, Vt., who survives him. The fruit of this marriage was one child, Carrie Emiline, born in 1867.

## BURLINGTON AND CHITTENDEN COUNTY CLINICAL SOCIETY.

The Burlington and Chittenden County Clinical Society held a regular meeting April 26, the paper of the evening being read by Dr. G. R. Pisek of New York on Cerebro-Spinal Meningitis. The discussion was opened by Dr. C. H. Beecher of Burlington, and participated in by many present.

## WHITE RIVER MEDICAL SOCIETY.

The twenty-first annual meeting of the White River Medical Society is being held at White River Junction to-day (May 15). In connection with the meeting is also held the eleventh annual ladies' night and banquet. This is a feature which might well be emulated by other societies.



# Vermont Medical Monthly.

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## ORIGINAL ARTICLES.

### CLINICAL CONSIDERATIONS OF CARCINOMA UTERI.\*

*By F. A. L. Lockhart, M. B. and C. M. Edin:  
M. D. McGill, Professor of Surgical Gynecology, University of Vermont, Lecturer in Gynecology, McGill University, Gynecologist to the Montreal General Hospital and Protestant Hospital for the Insane, Verdun.*

*Mr. President and Gentlemen:*

Cancer of the uterus may be a very hackneyed subject but I have ventured to bring it before you tonight for two reasons, firstly on account of its prevalence and secondly on account of the necessity of making an early diagnosis. While I have little patience with those pessimists who claim that cancer is on the increase, one cannot close one's eyes to the fact that is very prevalent and that it is rarely diagnosed at a sufficiently early stage for us to be able to give a good prognosis even after the most radical operation. We certainly see more cases of cancer now than we did several years ago but this is due rather to our improved methods of diagnosis than to an increase in the actual number of people who are affected with the disease. In looking over the annual reports of the Montreal General Hospital for ten years and of the Royal Victoria Hospital for none, it is seen that 26,813 patients have been treated in the surgical and gynecological wards. Among these patients, male and female, 1114 individuals were afflicted by cancer. Further examination of the reports show that, out of these 1114 patients, 629 were females, of whom the uterus was affected in 116 or 18.44%. If the cases of cancer of the breast be added to these they will make a total of 365 cases, leaving only 41.98% to be divided among all of the other organs of the body. Further subdivision shows that the fundus was the seat of disease in 16.5% and the cervix in

83.5% of those instances in which the uterus was the seat of the malignant process, this confirming the usual published statistics regarding the relative number of patients in whom these two structures are attacked.

The only possibility of lowering the rate of mortality of this dread malady depends upon the early recognition that there is something seriously wrong with the uterus by both the general public and the general practitioner. Education of the public in this matter requires the greatest caution so as not to cause unnecessary alarm, therefore one cannot proceed along the same lines as the antituberculosis leagues, for example, and spread pamphlets from door to door, but much can be done by quiet conversations with our patients and by educating the nurses to help in disseminating the requisite knowledge among the laity. A wonderful advance in this direction has been made in Germany during the last few years with the result that the percentage of operable, compared to inoperable, cases of carcinoma has largely increased. While in this country (and I include Canada), we are unable to operate on more than 15-20%, in Germany this operative percentage has risen to 50% and, where the abdominal route is chosen, in some cases to as high as 70%. Great Britain and France are far behind their Teutonic brethren in this humane advance, the operative percentage in neither country having risen above 30%. If such results have been obtained in Germany, there is no reason why, in time, the same improvement should not exist on this side of the Atlantic where the physicians are not one whit behind their Continental confreres in either ability or desire to help those who intrust their lives to their charge. One national characteristic, however, which will militate against our making such rapid progress is the independent nature of the people who are not as submissive to the control of their advisers, be they religious or medical, as are the Continental races.

The general practitioner will, I hope, pardon me and not think me presumptuous if I say that he is often responsible for the opera-

\*Read before the Burlington and Chittenden County Clinical Society, March 29, 1906.

tive gynecologist not having a larger percentage of operative cases, and I think that any man with a large consultation or hospital experience will bear me out in this statement. Time and again patients come to us who have had symptoms of carcinoma uteri for months and who, when they have consulted their family physician at the first onset of these symptoms, have been told that they were merely due to "change of life" and sent home without even a local examination having been made or even suggested. Cancer of the uterus is a most insidious disease and I teach my students that when a woman comes to them complaining of any gynecological trouble the two conditions to be first excluded are cancer and pregnancy.

One cause of this failure to investigate many of these cases is the absence of pain, the idea that there cannot be cancer because there is no pain being very widespread. Unfortunately this is a great fallacy, especially in the early stages of the disease. In my own series of over seventy cases of uterine cancer, there was no pain whatever in over 34% while in the vast majority of those cases where it was one of the complaints it was spoken of as a "back-ache" or else as of a "bearing-down" character and was probably due to some uterine displacement which was so commonly present, and in connection with this it must be remembered that the percentage of operability was very small, i. e. the patients were not seen until the disease was far advanced.

One of the earliest symptoms is hemorrhage. This at first may only be noticed after coitus or other irritation or after straining, for example at stool, in which latter case the blood is often supposed to come from haemorrhoids. Another form of onset is where menstruation is increased. Vaginal or intra-uterine instrumentation may be followed by a discharge of blood. The symptom which may be included with the above in the earliest symptoms of cancer is a leucorrhœal discharge. This is watery in character and may even from the very first have a strong heavy or disagreeable odor.

Where either or both of the above symptoms are present, a local examination should be insisted on, for while you may get both in cases where there is no cancer, yet in a very large percentage this will be the disease present. If the cancer is confined to the fundus nothing

will probably be made out but hemorrhage following the passage of the sound should make one suspicious and tissue should be removed by the curette and examined microscopically for signs of malignancy. The diagnosis of this condition from scrapings is usually no easy matter. In the intestine, the mucosa has a well marked submucosa and the penetration of this by the glands will suffice to demonstrate the malignancy of the process, but in the uterus we have no such convenient tissue and have to rely upon the appearance of the epithelium of the glands. Where there is multiplication of the epithelium of the lining of the gland or where the glands are increased in number with but little stroma between them, a diagnosis of cancer may be made. Where, on the contrary, the cervix is the seat of disease, it will be felt to be hard and nodular, or, a little later, the mucous membrane will be rough and irregular and will bleed upon touch. In this latter case, inspection of the part through a speculum will show that it is red and angry looking and that there are minute greyish patches upon the surface.

In a later stage of the process, of either cervical or fundal disease, the hemorrhage and foul discharge are greater in amount and the patient presents the well recognized cachexia of cancer. There will also be some loss of weight. On making a local examination, where the cervix is at fault, this structure will be excavated, forming a crater-like cavity the walls of which are rough and readily break down under pressure. They are also covered in patches by a greyish looking membrane, due to superficial sloughing. The lower border of this cavity is hard and indurated, representing the remains of the cervix. When the disease has advanced still further, there is little or no demarkation between the cervical cavity and the vagina, the one running into the other.

Carcinoma is more prevalent between the ages of 40 and 50 than at any other period of life. My own statistics are as follows:

Between 20-29 years of age, 5 cases.

"	30-39	"	"	20	"
"	40-49	"	"	27	"
"	50-59	"	"	12	"
"	60-69	"	"	4	"

The age was not stated in two cases.

Consideration of these figures will show that the greater number of cases occurred between the ages of 40-50, and that by includ-



ing those in the previous group, i. e. between 30-40, we get a percentage of about 67 of the whole number of women attacked.

Rapidity of extension depends upon the site of the disease to a great extent, that affecting the fundus being slower than where the cervix is the offending organ. The slowness of growth of cancer of the fundus was well illustrated in the case of a patient sent me in 1902 by Dr. Berkley of St. Albans. This patient was 64 years of age, a multipara, and had been complaining of uterine hemorrhage for nearly two years before he saw her. The uterus was removed and upon opening it up the disease was seen to be limited to the upper part of the anterior wall of the fundus. Its margin was sharply defined and it had almost penetrated through to the peritoneal surface. I am glad to be able to report that I heard from the patient the other day and that she was in perfect health. When it does occur, extension usually takes place by means of continuity of tissue, the vaginal wall being the first to suffer. The bladder is the organ next in frequency to be affected, and lastly the rectum. Sometimes, in the latest stages of the disease, the vagina has both the bladder and rectum opening into it and thus forms a kind of cloaca into which both feces and urine pour.

The lymphatics are not affected in the early stages of the disease as a rule but, once the growth has passed the limits of the uterine tissue, it may affect the glands at a distance, almost synchronously with those nearer at hand. It must not be supposed that every gland which is enlarged in a carcinomatous patient is the seat of malignant deposit as many of them will be found to be enlarged as result of a hyperplasia. Statistics in regard to the relative frequency of glandular involvement vary from 0.0% of Koenig<sup>1</sup>, who only had seven cases upon which to base his results, to 57.5% of Von Rosthorn<sup>2</sup> who investigated 33 cases. Even where the pelvic glands are but slightly affected, those running up alongside of and even under the aorta and vena cava may be the seat of secondary deposits and may be very readily overlooked during operation. This is a question of vital importance when considering the advisability of operating upon any given case, and, in connection with this matter, the following two cases reported by Hartman and Lecene<sup>3</sup> will be of interest. In the first case, the broad

ligament had been invaded by squamous celled epithelioma from the cervix which had also involved the tissue around the right ureter, and the following glands were enlarged: Two along the right external iliac artery; one at the bifurcation of the right common iliac artery; two lumbar glands, outside of and behind the right ureter and on the right of the inferior vena cava at the level of the fourth lumbar vertebra; one between the abdominal aorta and the inferior vena cava at the level of the inferior mesenteric artery; and two on either side of the inferior vena cava just below the entrance of the renal veins. Of all of these enlarged glands, but two were the seat of cancerous deposit, viz: those at the bifurcation of the common iliac artery and those between the abdominal aorta and the inferior vena cava.

The second case was one of adenocarcinoma of the fundus where the disease was confined to the interior of the uterus. Here the glands which were enlarged were, one beside the right external iliac artery; two opposite the sacral promontory; two between the right ureter and inferior vena cava opposite the fourth lumbar vertebra; one in front of the inferior vena cava below the entrance of the right renal vein and, lastly, a gland situated close to the obliterated hypogastric artery near the left side of the bladder. None of these glands were carcinomatous.

Again, Baisch<sup>4</sup> reports 125 cases of carcinoma uteri with the results of the examination of the glands. Twenty-four were cases in which the fundus was diseased and the glands were cancerous in only four of these, while they were infected in 50% of the cases where the cervix was the seat of disease, this difference being due probably to the greater frequency with which one sees extension in the cervical form of the disease. Kundrat and Oehleker have shown that the lymphatic vessels themselves are but very seldom the seat of disease, while they state that one-third of the cases of cervical disease are complicated by glandular infection. Baisch states that gland involvement is found in 16% of the cases where no disease of the parametrium can be found clinically.

In speaking of the relation between cancer of the uterus and childbirth, Wilson<sup>5</sup> states that cancer of the fundus is essentially a disease affecting the single whereas that of the cervix is one consequent upon married life,

and most authorities agree with him. My own experience, however, has not been the same. My nine cases of fundal cancer all occurred in married women, each had given birth to at least one child, the average being four for each woman. Among the cervical cases, one was single, in six there was no report as to pregnancies, seven women were sterile while 48 were multipara. The latter had given birth to 272 children, an average of 5.66 each. It is thus seen that the vast majority of women whose cervixes are the primary seat of carcinoma have given birth to children. More or less laceration of the fibres of the cervix accompanies every delivery although there may be no visible manifestation of such a condition, therefore, although impossible to give the percentage of laceration of the cervix in regard to cancer of that part owing to the disease often being so extensive as to make any tear which may be present. one cannot help recognizing the influence of the laceration upon the production of cancer.

The three conditions with which one is most likely to confuse carcinoma of the cervix are tuberculosis, inflammation and sloughing fibroid polypus. Tuberculosis of the cervix is extremely rare and is nearly always associated with tuberculosis in some other part of the patient's economy. The margins of the ulcer are punched out and the process runs a much more chronic course than in the case of carcinoma. In chronic inflammation of the cervix, the part is rendered extremely hard and nodular and the margins of the os appear red and eroded as in carcinoma. Contact may cause bleeding in both conditions but the hardness is more general, the hemorrhage is less marked and there is no watery foul smelling discharge. The diagnosis between this condition and simple inflammation may be cleared up by one of two methods. The first and simplest, and one which may be carried out by any general practitioner, is to place the woman on routine local treatment, applying tincture of iodine to the fornices and inserting boro-glyceride tampons three times a week for a short time. If the signs of inflammation have not shown marked improvement in two, or at the most three weeks, the case should be regarded as one of carcinoma and treated accordingly. The other and more rapid method is to remove a slice through the whole thickness of the cervix (a scraping is not enough)

and submit it to an experienced microscopist for an opinion. Usually, a sloughing polypus can be readily excluded by its mobility and by the presence of a sulcus all around it separating it from the cervix but it must be remembered that the two conditions may coexist, a polypus taking on the malignant change.

Complications were noted in three of the cases of disease of the fundus, i. e. in about 33%. In one, the ovaries and tubes were cancerous owing to extension of the process. In a second case, one ovary was cystic, while in the third, the inguinal glands were enlarged. It is much more common, however, to meet with them where the cervix is the seat of disease. In this series of 61 cases, the disease had spread to the vaginal wall in 23; vesico-vaginal fistula was seen in three; the broad ligament was involved in three; in one, one ovary was cystic; the bladder and vagina together were affected in one without the former being opened; the bladder alone, once; bladder and rectum, twice; and in three cases the inguinal glands were enlarged. These statistics as regards glandular involvement are incomplete, I regret to say, as the condition of the glands was not noted in the inoperable cases which comprised the great majority.

Treatment should, as far as possible, be preventive and may be effected by repairing all of the lacerations of the cervix whenever such are seen, and by removing all causes of irritation, such as a pessary which is pressing on the cervix or by reducing a complete prolapse of the uterus.

In an early case of either fundal or cervical disease, the only hope of cure is to remove the uterus, notwithstanding the statistics of Byrne's operation of amputation of the cervix by the cautery. The best method of performing hysterectomy in these cases is to open the abdomen in the middle line as for an abdominal hysterectomy. Tie off and divide the broad ligaments to the outer side of the appendages. Join the inferior extremities of these lateral incisions by a transverse incision across the anterior surface of the uterus which will enable you to dissect up a flap of peritoneum containing the bladder and ureters and which should be pushed well up out of the way. The two uterine arteries will now be exposed and should both be ligated before their division. A second flap of peritoneum is now formed by a transverse incision across the posterior sur-



face of the uterus. This organ should now be well drawn up and the cervix and upper part of the vagina thoroughly separated from the surrounding tissues. Holding the two flaps well away from it, the uterus is now pushed well down into the vagina and the two flaps united over it by a continuous catgut suture so as to completely shut off the peritoneal cavity, which is then wiped dry and closed after looking for and removing any enlarged glands which may be in reach. The patient is next placed in the lithotomy position and the vagina and surrounding parts rendered sterile. All of the diseased tissue is scraped away and the surface left is cauterized and again sterilized so that there may be no cancer cells left to become implanted on the new raw area and thus become the seat of a fresh outbreak of the disease. The cervix is also closed by a continuous catgut suture. The next step is the separation of the cervix from the surrounding structures by making a circular incision through the vaginal wall at the lowest limit of the abdominal separation and the removal of the uterus, ovaries and tubes through this opening. Any bleeding points are caught in forceps and the vessels ligated after which the whole wounded area is lightly packed with gauze, as is also the vagina. This method was described by Werder and is to be highly recommended. It necessitates less loss of blood than almost any other method, you are enabled to investigate the condition of the pelvic glands and, most important of all, the peritoneal cavity is entirely cut off from the vagina before that structure is opened, so that there is less danger of contamination by either sepsis or cancer cells.

Is it advisable to perform a more extensive intra-peritoneal dissection, as practiced by Wertheim and others, in order to remove all diseased glands? I think that this may be answered in the negative. Wertheim's operation is followed by a very large operative mortality whereas that attending the less radical methods is but very small, and it is utterly impossible to be sure that you have removed all of the diseased glands. Flatau<sup>6</sup>, in considering a series of 259 cases of cancer of the uterus, concludes that broadening the anatomical field of operation will make but little difference in the mortality of the disease and Wertheim, himself, states that where the glands are affected the rule is to have a recurrence no matter how extensive an operation

has been performed, as recurrence usually takes place in the vaginal cicatrix. My own statistics are as follows:

Cancer of the Fundus, nine cases: Five were treated by vaginal hysterectomy with one death from fatty heart a few hours after operation in an alcoholic woman weighing over 300 lbs. Two, or 50% of those who recovered from the operation, have been living and are now well over five years from the date of operation, i. e. 50% can be said to be cured. One is still alive and well but has not passed the five years time limit, having been operated on in 1902. One died four months after leaving my service from non-malignant chronic endocarditis, the autopsy revealing a good operative result and absolutely no trace of malignancy in any part of the body. One patient underwent abdominal hysterectomy two years ago and is still alive and in perfect health. Another patient had the uterus removed by a combination of the vaginal and abdominal methods (not Werder's) on account of the involvement of the appendages and died on the thirteenth day from heart failure. In the remaining two cases, the disease was too far advanced to permit of more than curettage and cauterization being done.

Cervical Disease, 61 cases: Vaginal hysterectomy, seven cases, one patient dying from sepsis, giving an operative mortality of 14.2%. Three of these cases may be regarded as cures as they are in the best of health today although operated on in 1898, 1900 and 1901 respectively, i. e., 42.8%. I am aware that this is a very large percentage of cures but it must be remembered that my series is a small one and I have not performed the radical operation in any case where there was any involvement of the surrounding parts, not considering that the small chance of freedom from recurrence in such cases warranted the largely increased risk. One patient has been lost sight of while the remaining two have died from recurrence in the vaginal cicatrix within nine months of the operation.

The *combined operation* was performed on two patients. One, I regret to say, is probably dead now from recurrence, the pathologist reporting that the disease had spread beyond the parts which were removed, while I have not been able to trace the second woman. Of the remaining cases, ten were seen in the out-door department of the Montreal General





happiness of our Fatherland. If obstructions exist militating against this Utopian condition, which are relievable by acts undertaken by the guardians of the public welfare, they should not shrink nor hesitate in the execution of their duty, but should cheerfully and promptly perform such acts, and if necessary, vicariously assume the office of father and mother to those who are bereft either by death or unfortunate condition of the benefits of such benignant influences.

The responsibilities of school authorities along these lines is enormous and involves amongst other things, such questions as the location of school buildings with reference to air, (Billings says that children should have 30 cubic feet of fresh air each minute for each child) space, noise and drainage; the construction of the building itself with regard to window space, and the direction of light, proper ventilation, plumbing and heating; the necessity for good and artificial illumination; the prevention of overcrowding; the necessity of medical inspection before and during school life; the use of proper drinking water and cups; the providing of wash stands, towels, etc., that will be free from contagion; the construction of desks of differing sizes for differing ages; the use of desks that are of the proper slant and height, and compel an upright position in reading and writing; the frequent intermission from studies, and the change from one study to another, thus compelling a combined rest of eyes, mind and body; the proper regulation of the means of study, such as the distances and color of blackboards, the color of slates, the character of print, and the paper on which it is printed; the necessity for vaccination; the exclusion of contagious diseases, and the exertion of advisable quarantine regulations; the placing of scholars in grades suitable for their physical and mental conditions; the forbidding of too many studies, in order to prevent much home study; the supervision of games, sports, etc., and the general physical health of scholars; these and many other problems must be met and solved by school authorities, and upon their wise and conservative opinions and acts depend very largely the ocular and aural health of children and the general well-being of the coming generation.

One of the most important topics for those who manage schools to consider is the proper care of children during the period of ado-

lescence, or in other words, between the ages of about fourteen and eighteen. During the course of this wonderful unfolding of Nature's purposes, the nervous, mental and physical condition of the child is in a peculiarly sensitive and precarious condition, Nature is busy with her physiological changes, the child's resistance is taxed to its utmost, and during this important epoch of existence the individual should surely be relieved of all unnecessary physical, nervous and mental taxation. This is not the time for excessive study, either at school or at home, it is not the time for grade vaulting, or extreme mental activity, and yet how often do we see children, ambitious themselves, perhaps, or forced to unduly studious habits by ambitious parents or teachers, palling and fading away from over-application, until a broken-down constitution, thus early in life, proclaims the folly of the undue prosecution of a prevailing error.

One of the most interesting investigations that have been recently made concerning the relations existing between ocular conditions and mental development, has been undertaken by Gelpe, who has examined 578 physically defective children and found that 419 or about 72% had defective eyes, and that the worse the mental condition of the child, the worse the eyes were found. A very large majority of these cases were improved by treatment, glasses, etc., showing what can be done even with children of feeble intellect by intelligent examination and care. He shows that a predisposition to feeble-mindedness, congenital or otherwise, may certainly become active or be aggravated by various ocular defects, especially by uncorrected refractive errors. He compares defective visual organs to an ill-adjusted objective of a photographic camera, imparting to the retina and the brain indistinct images, thus putting such a severe strain on the nervous system as to handicap the mental development of the child. He found the significant fact that myopia decreased in direct proportion with the decrease of intelligence, and found that in these children of defective mentality, that myopia existed in about 12% of the cases, hypermetropia in about 32%, astigmatism occurred in 30% of the cases. These data are most interesting and, I believe, fully coincide with the opinion of those who have observed many children of low physical or mental development.

The title of my paper indicated that I am here to speak to you about the eyes and ears of school children, and while I have, perhaps, wandered far from my subject, I contend that it is but a narrow specialist who believes that these organs are separate kingdoms, to be separately considered; they are a part of the body corporate and must be regarded as merely sections of the human frame, and largely dependent upon the other portions of the body for their intrinsic health and well-being. Consequently it is quite impossible to intelligently discuss the eyes and ears of school children without at least having something to say concerning the more comprehensive topic of the general well-being of the children themselves. I trust, therefore, that I will not be considered as specializing too much when I say that I believe it to be merely stating a truth when I affirm that aside from mental capacity, there is nothing so essential to the acquirement of an education as good eyes and ears, for without them the pathway to an education must be thorny indeed. The examination of these organs of special sense by physicians is no novelty and has been accomplished many times for the purpose of gathering statistics, and doing good. The employment of physicians for this work, however, has been well proven to be practically impossible, as it involves too great an annual expense, and almost invariably produces so much professional jealousy and friction as to place an efficient quietus upon any future investigations.

For the purpose, therefore, of overcoming these two objections, and yet of accomplishing the end in view, I proposed in February, 1895, that such examinations should be annually and systematically performed by school teachers, and that any scholars found to be defective should be furnished with what I call a "Card of Warning," which is to be handed to the parent. This card simply notifies the parent that his child is believed to have some eye or ear disease which impedes his progress in school. The parent is urged to consult his family physician, or some eye or ear surgeon, either at his office or free dispensary. The card does not *insist* upon such a consultation, and leaves it entirely open as to which physician shall be consulted. In this way, no physician sees the child until the parent voluntarily escorts the patient to some medical man of his own choice; this, of course, does away

entirely with any professional friction, or any suspicion of collusion or favoritism. In order that the presence of disease may be detected by the teacher I have arranged a series of nine questions, absolutely plain and simple in their character, for which the teacher is to obtain answers. They are, for instance, such questions as these: "Does the pupil habitually suffer from inflamed lids or eyes?" "Does the pupil fail to read a majority of the letters in the number XX line of the Snellen's test types with either eye?" "Does matter or a foul odor proceed from either ear?" "Is the pupil an habitual mouth-breather?" It will be observed that these questions are so primitive in their character that any teacher worthy the name can easily furnish answers to them, and yet the nine questions are so comprehensive in their significance that when correctly answered they will disclose the existence of 90% of serious eye, ear, nose and throat diseases. The teacher, however, should not feel that she is expected to furnish a diagnosis of the child's disease, she is only expected to know that some abnormal condition exists. The diagnosis and treatment are left for the physician.

These tests should be made as soon as possible after the opening of the Fall term as this is not only the most convenient time for the work, but it will also give the teachers a long opportunity of following up the tests and watching the effect of medical treatment. The tests should be made by the room teachers, as they are more familiar with their scholars' infirmities, and such a subdivision of labor imposes no hardship upon anyone. A school room can easily be examined in a day, which means, of course, that every public school child in any city can be examined in a day, provided each teacher does her own examining, or, if it is preferred, a few pupils could be kept after school each day, and the entire work accomplished easily in one week. The extra work thus expended by the teachers will be generously rewarded in the end by the transforming of dull students to bright ones by medical treatment, glasses, deafness relieved, etc., for who does not know the nervous exhaustion experienced by teachers in endeavoring to instill knowledge into children's minds who are suffering from eye or ear defects.

As a complete description of the tests will be given at the end of this address, it will be unnecessary to further describe the method at



this juncture, and I will merely say in answer to many inquiries that the expense of making these tests is so nominal that it is really not worth considering. For instance, a large city containing 5000 school rooms can have a testing chart with testing letters and instructions to teachers printed on it for every room by an expenditure of about \$200. The expense for "Warning Cards" and simple record blanks need not exceed \$100. A city like Chicago can, therefore, have this work thoroughly accomplished by the expenditure of a little time, labor and \$300. The testing charts and teachers' instructions can be used for years if carefully preserved. It will, therefore, be seen that the question of expense is quite immaterial and need never be considered; the only question involved is an honest determination to see that this important work for the coming generation is annually and properly accomplished.

In order to facilitate the work and bring it more fully before the profession, I secured at the New Orleans meeting of the American Medical Association, the passage of the following resolutions, both in the Ophthalmological section and the House of Delegates:

"WHEREAS, the value of perfect sight and hearing is not fully appreciated by educators, and neglect of the delicate organs of vision and hearing often leads to disease of these structures, therefore, be it

RESOLVED, that it is the sense of the American Medical Association that measures be taken by boards of health, boards of education and school authorities, and, where possible, legislation be secured, looking to the examination of the eyes and ears of all school children that disease in its incipency may be discovered and corrected."

Since then these resolutions have been adopted by the Mississippi Valley Medical Association and by the State Medical Societies of the following States: Minnesota, Colorado, Illinois, Montana, New York, Indiana, North Dakota, Rhode Island, Alabama, Michigan, Utah, South Dakota, Delaware, California, Massachusetts, Arizona, West Virginia, Kentucky, Louisiana, Nebraska and Washington. The resolutions have also been adopted by the American Public Health Association, by the State and Provincial Boards of Health of North America, and by the State Boards of Health of the following States: Kansas, Minnesota, Colorado, Wisconsin, North Carolina, Vermont, Illinois, Montana, New York, Indiana, Connecticut, Ohio, North Dakota, Rhode Island, Alabama, Pennsylvania, Maine,

New Hampshire, Michigan and Utah, also been adopted by the State Boards of Education of the following States: Texas, Kansas, Minnesota, Colorado, Wisconsin, North Carolina, Vermont and Connecticut. Besides this the tests are being placed in operation in the Government Schools in India, and in hundreds of schools in America where they are not required by school authorities.

It will thus be seen that the work is progressing, and I assume from the fact that I have been invited here to speak upon this subject that the State of Ohio, always foremost in excellent public service, intends to vigorously undertake this important step. Two State Legislatures have incorporated this movement in a public law, Connecticut and Vermont, and in the last message of the Governor of Massachusetts to the Legislature, he strongly recommends that the annual systematic examination of public school childrens' eyes and ears be ordered by the law makers of that State. The Connecticut law reads as follows:

Section 1. The State Board of Education shall prepare or cause to be prepared suitable test cards and blanks to be used in testing the eyesight of the pupils in public schools and shall furnish the same, with all necessary instructions for their use, free of expense to every school in the State.

Section 2. The superintendent, principal or teacher in every school, sometime during the Fall term in each year, shall test the eyesight of all pupils under his charge, according to the instructions furnished as above provided and shall notify in writing the parent or guardian of every pupil who shall be found to have any defect of vision or disease of the eyes, with a brief statement of such defect or disease, and shall make a written report of all such cases to the State Board of Education.

The Vermont law reads as follows:

Section 1. The State Board of Health and the superintendent of education shall prepare or cause to be prepared suitable test cards, blanks, record books and other needful appliances to be used in testing the sight and hearing of pupils in public schools, and necessary instructions for their use; and the Superintendent of Education shall furnish the same free of expense to every school in the State. The superintendent, principal, or teacher in every school during the month of September in each year shall test the sight and hearing of all pupils under his charge, and keep a record of such examination according to the instructions furnished and shall notify in writing the parent or guardian of every pupil who shall be found to have any defect of vision or hearing, or disease of eyes or ears, with a brief statement of such defect or disease and shall make a written report of all such examinations to the Superintendent of Education as he may require.

Section 2. The State Auditor is hereby directed to draw his order on the State Treasurer for such sums and at such times as the Superintendent of Education, with the approval of the State Board of Health, may require to carry out the provisions of this act. The

total expense under this act shall not exceed Six Hundred (\$600.00) Dollars in any biennial term ending June 30.

Section 3. This act shall take effect July 1, 1905.

The Vermont law seems to be the better of the two, not only because it specifically states that the examination shall be made in September, but particularly because it includes ear defects (which, of course, means also nose and throat defects) which is of the greatest importance. It is to be hoped that the Connecticut law will be amended to fulfil this requirement. It is also to be hoped that these tests will become a law, and an active, living law in every State of this country, but to effect this the combined medical energy of the profession in each state is a positive necessity. The American Medical Association resolutions should be passed by every State Medical Society, and active committees appointed to induce the State Boards of Health and Education to likewise adopt them and to actively undertake the work. If this can be done, an act of Legislature is hardly necessary, still if this can be accomplished it is certainly a vast improvement, and should always be effected where possible. It should be remembered, however, that Legislatures are hard to move, and only convene once in two years, while Boards of Education and Health are more susceptible to measures of this kind and can be reached at almost any time. I would, therefore, advise that those interested in the matter should first secure the co-operation of their State Medical Societies, and Boards of Health and Education, and then secure suitable legislation on the subject wherever it is possible.

Let me then ask you, and through you, all Boards of Health and Education, all Legislatures and all who are interested in the physical and moral welfare of our children, do you believe that bad vision and hearing constitute an important barrier to the reasonable and easy acquirement of an education?

Do you believe that a vast number of children are thus embarrassed?

Do you believe that a great benefit to the children, to society at large and mankind in general, would be effected if such physical defects could be detected and relieved?

Do you believe that some such plan as I have proposed would be instrumental in largely relieving such defects?

Do you believe such a plan to be practical, unobjectionable and inexpensive?

I think you must all answer "yes" to each one of these questions. Then may I ask you still another question, why do you not take up this work and carry it through? I address this interrogative to those who by reason of their public offices have the power to enact rules and laws calculated to produce beneficent results on the public at large. I, as a private individual, can do nothing, but you as Board of Health officers, can do much. Will you do it?

72 Madison St.

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## **PATHOLOGY OF CHRONIC NEPHRITIS.**

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*By W. E. Lazelle, M. D., of Barre, Vt.*

It is not the object of this paper to enlighten you on the subject of chronic nephritis, say rather to enlighten myself and draw from you in the discussion, some of those valued points concerning these cases, which are conspicuously absent from books. In construction I shall follow no fixed method, and shall not touch upon the clinical picture, symptoms, and treatment, which are so well fixed in your mind as to require no further mention.

Authority describes two forms of chronic nephritis, one in which albuminuria and dropsy are distinctive features; and one not associated with dropsy, in which we have an increase in the connective tissue with atrophy of glomeruli, and large quantity of urine with low specific gravity, containing little or no albumin. These are not separate lesions, but types of the same disease. The morbid anatomy in these two conditions less widely differs than does their clinical picture, this picture depending for its peculiar characteristics upon the presence or absence of an exudation of serum into the urinary tubules. Chronic Nephritis of whatever variety produces changes in all the elements of the kidney structure, sometimes one predominating, sometimes the other.

In chronic nephritis with exudation, it is the secreting surfaces which exhibit the severest pathological changes. When we say the secreting surfaces, we mean the glomeruli and the convoluted tubules, more especially, although the spiral and straight tubes become involved; the glomeruli secreting the water and salts, the convoluted tube the urea. The inflammation and degeneration being more



marked in one than the other. constitute the glomerular or tubular variety. We have said that this form of chronic nephritis was characterized by albuminaria and dropsy. Now in order to more fully understand the significance of these symptoms, I will quote you the pathology, at this point.

"In the glomerular form, the naked eye may be absolutely normal, though occasionally the glomeruli stand out as sharply defined gray points, except when hemorrhage has taken place in Bowman's capsule, when they stand out as prominent red points, always larger than normal, and may be increased to twice the normal size. The enlargement is due partly to hyperemia, partly to distention of tubules, and partly to edema of the intertubular connective tissue, hence the enlargement is found mainly in the cortical portion. The capsule separates readily, and the substance is soft and friable. The cortex is mottled in appearance (usually), the darker color being due to hyperemia and hemorrhage, and the lighter to the accumulation of degenerated tubular epithelium. In the early stages of the more acute cases, the cortex is redder than normal, but owing to the necrosis, degeneration, and the accumulation of the tubular epithelium, it soon becomes paler and opaque. In the glomerular form the intercapsular spaces are found to contain a number of new, and, as a rule, degenerated cells, some of which are derived from the cells which once covered the vascular tuft and lined the capsule, which may have thus lost all its epithelium. Mixed with these may be a few leucocytes, and also a few cells from the lining of the capillaries. Some of the capillary loops are distended and contain an unusually large number of leucocytes, which show signs of degeneration, while the endothelial cells are much swollen and also degenerated. There is so much albuminous exudation that the vascular tuft is compressed, and circulation thereby impeded. In some cases the intima of the minute arteries supplying the glomeruli, undergoes hyaline degeneration, with consequent narrowing of the lumen of the affected vessel. The muscular cells of the small arteries may also be thickened.

"So it is, in most cases, we have a cellular infiltration of the intertubular connective tissue, an albuminous exudation, marked degeneration of epithelium, and crowding of tubes

with leucocytes and desquamated epithelium (later changes). At this stage the changes already described may subside, and, with the exception of desquamation of damaged epithelium, no further degenerative changes take place. Many of the surviving epithelial cells proliferate, but in all probability the repair is never absolutely complete. Thus the kidneys improve and approach the normal, although for weeks longer casts and albumin may be passed in the urine. In other cases the disease progresses, and although the hyperemia is less marked, the degeneration of epithelium continues. In these cases the desquamated epithelial cells which are passed with the urine, instead of presenting a swollen and granular appearance, constantly contains molecules of fat. The amount of fat thus passed gradually increases as the degeneration proceeds until ultimately no recognizable cells can be found, and the fat appears as free globules in the tube casts. This prolonged fatty degeneration of the epithelium is attended by corresponding changes in the appearance of the kidney. No hyperemia is noticeable. The enlarged cortex presents a more uniformly yellowish tinge, marked with minute yellowish streaks, owing to the presence of fat in the tubule. It is said that it is not impossible for repair to take place, and recovery ensue even at this stage. When the inflammatory process is of longer duration, or when the kidneys are the seat of repeated attacks of sub-acute inflammation, permanent changes occur and the intertubular connective tissue becomes involved.

(Large White Kidney) "The Tubular epithelium shows little tendency to proliferate, and considerable portions of the tubules may be completely denuded. The intertubular tissue develops into a loose fibrous structure, which, together with the atrophy of the damaged glomeruli and denuded tubules, lead to much diminution in size, especially of cortex, and to slight irregularities of surface.

(Small White Kidney) "In other cases death ensues before any marked atrophy has taken place, while the tubules are distended or blocked by the degenerated products, and the inter-tubular tissue is loose and oedematous."

Now what is the significance of albumin in the urine, and how does it get there? The presence of albumin in the urine means that the serum albumin, which is a constituent of the blood, has in some manner found its way

into the urinary tubules, and has become mixed with the urine. There are several ways in which this could be accomplished, the more direct way being hemorrhage from bladder, urinary tubules, or Malpighian tuft, the blood and urine being directly mixed. But what concerns us today is the transudation of blood serum from the capillaries of the kidney and urinary tubules. This transudation is not unlike that which takes place from capillaries of other parts of the body.

In pleurisy and peritonitis the degenerative changes produced by the inflammation, render the capillaries more permeable, and serum escapes in the direction of least resistance, hence not into the tissues themselves, but into the serous cavities. So it is in the kidney that the serum escapes into the urinary tubules instead of into the kidney substance. When we speak then of albuminaria, we mean that blood serum has escaped from capillaries into the urinary tubules and become mixed with the urine in a manner not unlike that which takes place in the serous cavities. The kidney lays no claim to a distinctive type of inflammation, and is liable to the same morbid processes which are peculiar to inflammation in other parts of the body. Those conditions then which produce dropsy in other parts of body, will produce albuminaria in inflammation of the kidney.

In inflammation of the kidney, whether acute or chronic, and from whatever cause, albuminaria will be found to exist, and is a direct result of the inflammation, which softens walls of capillaries and renders them more permeable. Still another reason for albumin in urine, also pathological, is found in the necrosed and degenerated epithelial lining of the tubules. The fact that exudation is always associated with those diseases of the kidney in which the epithelium is necrosed and degenerated, is substantial evidence that the epithelium allows the blood serum to escape.

Dropsy being so closely allied with albuminaria, it seems profitable at this time to consider its manner of occurrence. We have said that albuminaria was caused by the transudation of blood serum from the capillaries. Now dropsy differs from albuminaria only in location, it being a transudation of blood serum into subcutaneous connective tissue, together with diminished absorption on the part of the lymphatics. Transudation of blood serum into

the tubule gives us albuminaria, while transudation of blood serum into the intercellular tissue of the kidney would give us dropsy of the kidney. The former theory that dropsy was occasioned by defective action of the kidney, and required diuretics and cathartics for its cure, is not in favor at the present time. Either increased pressure, or a change in the composition of the blood, may cause increased transudation from the capillaries.

By reason of the continued loss of albumin in chronic nephritis, a blood which is deficient in albumin, circulates in the tissues, and by the theory of osmotic pressure, passes more readily through an animal membrane, than a more concentrated solution. In former times blood letting was found to do injury by increasing the dropsy, and was undoubtedly due to further depleting the blood stream. One cannot offer however the depleting of the blood stream as the sole cause of dropsy, as the practice of transfusion which is so common at the present time, after severe hemorrhage, is not followed by dropsy. There must be somewhere defective action on the part of the diseased tissues, which plays an important part in the production of this symptom, and at the present time, remains unexplained.

We are talking about increased blood pressure in chronic nephritis, and its influence on dropsy, and no doubt you have in mind at the present time, those cases of yours, nearly always associated with weak and irregular heart's action, which on the first thought would appear inconsistent with increased blood pressure. In this case increased blood pressure is due to the engorgement of the capillaries, as result of cardiac failure. In fact weak and irregular heart's action is so closely associated with chronic nephritis as to leave us sometimes in doubt as to which really appears first. When the cardiac disease originates subsequent to the renal affection, it is thought to be due to the existing anemia, which is a powerful agent in the production of hypertrophy and dilation of heart, but it is not at all unlikely that the two have one common cause.

What becomes of the urea, it being always diminished in chronic nephritis? Time was when the accumulation of urea in the blood was considered responsible for that train of symptoms known as uremia, but recent investigations have practically ex-



ploded this theory. It has been frequently observed that complete suppression of the urine is not necessarily followed by symptoms of uremia, and that symptoms of uremia make their appearance when an excess of urea does not exist in the blood. That urea in excess in the blood is productive of no deleterious results while the kidney is in active operation, is a fact well established by experiments on animals. And it is only when the functions of the kidney are interfered with or abolished that death takes place.

It is not my intention to detain you with the numerous theories which have from time to time been advanced concerning this train of symptoms, but to search with you for the cause of headache, blindness, nausea, anemia, and general debility attendant upon chronic nephritis. It would appear that poisoning by urea alone is not the solution of this problem. It is a very popular and recent theory that the above symptoms are caused by an interference with the functions of the kidney, which lead to a disturbance of the regular chemical changes in all parts of the body. These changes are followed by a change in the nutrition of the tissues, which is manifested by a loss of weight and strength, anemia, and disordered functions of the brain. While this explains, in a general way, it avoids a direct issue, and leaves us still hunting for the specific cause of these distressing and dangerous symptoms.

By reason of the loss of albumin and the thinning of the blood stream, hypertrophy of the left ventricle is said to increase the blood pressure in the arteries. It has been suggested, and appears consistent with these symptoms, that if by any accidental circumstance the blood pressure is suddenly increased, or the blood stream further thinned, edema is increased, which edema may involve brain tissue, as well as lungs, serous cavities, or cellular tissue. The form of the attack will vary according to the portion of the brain which becomes edematous. If the cerebral hemispheres alone are involved, the patient becomes comatose, convulsions without coma, if the central portions are involved, and both convulsions and coma, if central and cortical portions are involved.

WANTED:—By a young physician, an opportunity to substitute for a few months.

DR. C. E. BUCHANAN,  
West Lebanon, N. H.

## A CASE OF HYPOSPADIAS THROUGH FIVE GENERATIONS.

*By T. J. Strong, M. D., of Burlington.*

During five years' service in the U. S. Army, both in the tropics and this country, the writer saw several cases of hypospadias among soldiers, all more or less interesting and all coming under observation for treatment for specific urethritis either acute or chronic.

The history of these cases was of no particular interest, the abnormality being congenital, and as far as can be remembered now, extending over not more than one or two generations. All cases refused operative interference. The location of the meatus was different in all cases—in some posterior to the coronal sulcus and in others on the glans penis at varying distances from the end. The openings were small in some and larger in others. No great difficulty was experienced in urinating (except the "ardor urinae" attendant upon the acute cases of urethritis), and the one disagreeable feature presented itself in the treatment, it being somewhat more difficult to give an irrigation or injection than in a normal penis. However the cases progressed favorably, one necessitating a meatotomy, the opening kept dilated by straight conical steel sounds.

As above stated, these cases presented nothing of a particular interest beyond the fact that there was no opening in the penis in any one of them in its normal situation and if the writer remembers correctly, no sign or indentation where the meatus should have opened normally. A case has recently been seen which presents an interesting family history showing heredity through five generations of this abnormality. A careful perusal of literature relating to abnormalities of this kind does not reveal any such length of time. The case is herewith presented in its entirety:

R. P., soldier, Fort Ethan Allen, Vt., age 21, unmarried. Called at office for treatment for gonorrhoea.

Previous History. Diseases incident to childhood, no serious illness. About one year ago contracted gonorrhoea and claimed he was cured in ten days. Closer questioning elicited the fact that he noticed once in a while a "morning drop." Seven or eight months ago after sexual intercourse he had a profuse purulent discharge from his penis and took "cap-

sules" and other medicines internally but no injections or local treatment.

**Present History:** Claims to have a discharge from urethra and at times a burning sensation on urination—these constituting practically all his symptoms.

**Examination:** Patient has a purulent discharge from the meatus, which is situated about half-way from end of penis to the corona glandis. Penis is normal in shape and at the end is an indenture where the normal opening should be. Below this and leading to the meatus is a slight furrow or groove in the median line. The pus was secured and examined and showed numerous gonococci. The opening in the penis looked nearly downward and patient stated he generally held his penis out straight to urinate to avoid soiling his clothing. He was asked if he was born with that condition to which he replied in the affirmative and then stated the following curious family history: His great grandfather, grandfather, father and three brothers were all affected in the same way. Although he said that he had never seen his greatgrandfather's nor grandfather's penis, he had been told the above facts. He had seen however, his father's and three brothers organs, and one of them was "worse" than his own. He had one brother who had escaped the affliction, and to cap the curious state of affairs said a brother who was married (had hypospodias) had a child who "had the same thing," thus making five generations in direct descendancy with a hypospodias.

The urethritis was treated by irrigations—no stricture was present—a bent glass nozzle being inserted into the abnormal meatus more easily than a straight one. The case progressed favorably and owing to inability of the patient to come for office treatment as often as desired he took the alternative—use of injections—at his quarters, and only recently reported to say that he was rapidly improving.

## BULLET WOUNDS OF THE INTESTINE.

*Report of a Case by E. W. McKille, M. D., of St. Albans, Vt.*

On Tuesday, Mar. 6 at 4 P. M., C. H. S., a brass moulder, while examining a 38 calibre Smith & Wesson revolver, shot himself about the centre of a triangular space, whose apices

were the pubis, the umbilicus and the left anterior superior spine of the crest of the ilium. That the weapon was held against the belly, was proven by the fact that the clothing and flesh of the abdomen were burned. Patient passed immediately into a state of collapse, from which he rallied somewhat by 6 P. M., aided undoubtedly, by saline enemas and hypodermics of strychnine, glonoin and atropine. Removed to hospital at 7 P. M. and usual preparation given for an abdominal section. The condition of the patient was by this time excellent; he was able to get out of bed without assistance and walk some distance to the urinal. While the surgical stage was being reached a second shaving and scrubbing of the abdomen was done.

The incision was made with the bullet wound as a centre, down through the peritoneum, and the descending colon carefully drawn out of the six inch incision. Four punctures were found, which were closed by purse string sutures of medium sized catgut, the openings inverted into the lumen of the bowel, by a probe and the suture drawn tight. The whole damaged area was now turned in and held by an uninterrupted catgut ligature; and the mesentery drawn over all. The whole peritoneal cavity was of course flooded with fecal material, but no further openings were found. No search was made for the bullet. Several gallons of hot sterile saline solution were poured into the peritoneal cavity, until it returned perfectly clear. The peritoneum was now sewed up by an uninterrupted catgut suture, the different sets of muscles were treated likewise, and the skin by interrupted silkworm gut. A piece of iodoform drainage tape was left in the lower angle of the wound. His recovery was almost without incident. The tape was taken out on the second day, the skin sutures on the fifth day. The opening made by the tape was all closed on the twelfth day. He was given two grains of calomel on the day following the operation, which was very effectual. His temperature reached 100° on two occasions but soon reached and remained normal. It was necessary to use the catheter for three days following the operation. He was discharged from the hospital, on the twenty-first day, and within a month from the date of the accident was again at work. Drs. Gibson and Arnold assisted me at the operation.



## Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the Medical Sciences.*

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### EDITORIAL.

The fifty-seventh annual meeting of The American Medical Association can be pronounced a success. The attendance was the largest in the history of the association and nothing which could be done by the local committee to render the occasion a pleasant one was left undone. Much of the success of any meeting of this character depends on the efforts of the local committee. Not only was this spirit of welcome evident among the medical men of Boston and vicinity but it was also very apparent among citizens of all classes from the Mayor to the workingman on the street. In short Boston outdid herself in her hospitality and no one who was present there during this meeting need cite the South for an example of hospitality. Another thing which was noticeable was the very large attendance from New England. Of course it was a rare opportunity for the man from this section but one of those opportunities which are too often

neglected. Perhaps the strongest and most lasting impression which one brings away with him from such a gathering is the rare good fellowship among the members of the medical profession when removed from local environment. There can be no question of the value of such meetings of medical men. One is sure to imbibe some of the enthusiasm with which a meeting is pregnant and a large part of this spirit is developed not so much by the papers as by the shoulder to shoulder, hand to hand fellowship among the attending members. Another impression from the meeting is of the enormous power of such an organization. When one stops to consider that the doctors of the country are as a rule among the leaders of their respective communities, at the same time coming in more intimate contact with their constituency than any other profession and that this association includes in its membership a large proportion of these doctors the sources of this power are immediately evident. Once let this Association become unanimously convinced of the necessity of any reform its accomplishment is inevitable.

The recent publications on renal pathology as reflected by the urine is rather confusing to the average medical man. To be told that albumin and casts are of no significance in the diagnosis of nephritis gives one the feeling of having lost one's anchor and being adrift again from what was considered a safe mooring. This is practically the conclusion to which the reported work of Cabot, Emerson, Klieneberger and Oxenius drives us. Progress in medical science, as in all others, is always made over the remains of shattered theories and when some of these, like this one, have been accepted for years as axiomatic the shock is bewildering. We cannot make ourselves believe as yet, however, that the hyaline, granular and epithelial cast is not of considerable

significance. Of what moment is it if the pathological appearance of the kidney upon autopsy does not show just the lesion suspected? Of what importance if we call the renal condition "irritation" instead of nephritis so long as the treatment called for is the same? And surely a condition of renal irritation which is so severe would if long continued lead to organic changes—a genuine nephritis. Taking such a view the whole gist of the matter is about this; that albumin and casts may indicate a condition prior to a genuine organic disease of the kidneys which gives to these symptoms a greater value as warnings and signs for treatment, and allow the removal of some of these cases from the realm of the doubtful to that of a hopeful prognosis.

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### NEWS AND PERSONAL ITEMS.

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*We desire to make this column of personal interest to all. Physicians are requested to send news items.*

#### VERMONT.

Dr. Jonathan Flagg, a graduate of the University of Vermont in 1880, died at Worcester, Mass., May 30. He was 46 years old.

Dr. Howard L. Averill of Middlebury and Miss Minnie Cora White of Bristol were married at the home of the bride June 6, Rev. S. P. Perry officiating.

Dr. C. S. Caverly, chairman of the State Board of Health, announces that the provisional programme for the health officers' school to be held at Burlington from July 9 to 13 had been completed. Dr. Wiley of Washington will speak on pure food, Dr. Whipple of New York will speak on sewage disposal, Dr. F. W. Valentine of New York will speak on the danger of venereal diseases. The society for the prevention of tuberculosis will hold a meeting at the time of the officers' school.

At a meeting of the Vermont Tuberculosis Commission at Rutland, May 18, the building committee was empowered to complete plans for the building of the sanatorium and to employ a landscape gardener, to put the grounds in an attractive condition, with driveways, flower beds, fountains, etc. Miss Emily D.

Proctor of Brookline, Mass., resigned as treasurer of the board of trustees, and Benjamin Williams, Jr., of Proctor was appointed to succeed her.

The commencement exercises of the College of Medicine occur in connection with the other departments of the University on Wednesday, June 27, at 11 A. M. The meeting of the Alumni Association of the medical department will be held on Tuesday afternoon, followed by the annual banquet. This being also "carnival week" in Burlington, reduced rates are available on all the railroads and it is hoped that a large number of alumni will take this opportunity to visit the new medical college and renew friendships.

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#### NEW HAMPSHIRE.

Dr. H. I. Reed of Dover and Miss May Eleanor, daughter of the late Mr. and Mrs. Samuel Tibbetts of Berwick, were married at Dover, May 23.

At the 150th annual meeting of the New Hampshire Medical Society, held at Concord, May 17 and 18, the following officers were elected: President, Dr. Ira J. Prouty, Keene; vice-president, Dr. John H. Neal, Rochester; secretary, Dr. D. E. Sullivan, Concord; treasurer, Dr. D. M. Currier, Newport; necrologist, Dr. E. E. Graves, Penacook. Under the new constitution the entire Merrimack county society is constituted a committee of arrangements for the next annual meeting. The house of delegates, in making its report, announced that the policy of expelling from membership all physicians who persisted in performing contract work would be strictly enforced. This means that the physicians officially connected with fraternal bodies, as well as the other forms of contract work in the profession, will have to cease their work along these lines or stand expelled from the New Hampshire Medical Society.

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#### MAINE.

The death of Dr. Edgar MacNichol of Jonesport, occurred May 2, resulting from an acute attack of appendicitis. Dr. MacNichol was born in St. George, N. B., 63 years ago, but has been a long-time resident of Jonesport, practicing there for 36 years.

Dr. Onslow M. Kingsbury died at Harmon's Harbor, May 15. The remains were



taken to his home in Georgetown where the funeral was held. He was a graduate of Bowdoin Medical College and had practiced medicine at Georgetown for the past 33 years.

The Kennebec County Medical Association held its annual meeting at Augusta, May 23. The program was as follows: President's address, Alton Sawyer, M. D., Gardiner; "State Hospital Provisions for the Criminal Insane," Bigelow T. Sanborn, M. D., Augusta; discussion opened by F. C. Thayer, M. D., Waterville; W. P. Giddings, M. D., Gardiner; "Some Sequelae of Gonorrhoea in Males," E. W. Boyer, M. D., Waterville; discussion opened by W. Johnson, M. D., Augusta; E. E. Hardy, M. D., N. Vassalboro; "Intestinal Anti-intoxication and its Relation to Disease," E. P. Fish, M. D., Sidney; discussion opened by J. E. Tuell, M. D., Augusta; H. E. Milliken, M. D., Waterville.

## AN EPITOME OF CURRENT MEDICAL LITERATURE.

### NEPHRITIS AND URINARY DIAGNOSIS.

#### RENAL DIAGNOSIS.

CABOT (*N. Y. Med. Journal*, May 12) contributes a paper on "The Diagnosis of Renal Functions." He maintains that it is the functions rather than the gross or microscopical appearance of the kidney which we may hope to recognize by our ante-mortem examinations. He distinguishes three sets of phenomena: 1st, Renal irritation by which is meant all that shows itself in the presence of albumen and casts. 2nd, Renal insufficiency, which may exist with or without albumen or casts and shows itself chiefly in the physical characteristics of the urine and in the condition of the rest of the body (oliguria, dropsy, and uraemia). 3rd, Nephritis, which shows itself in the post-mortem appearance of the kidney. In his views upon these conditions the author is influenced by the results of studies which were made by him at the Mass. General Hospital and published in *The Journal of the A. M. A.*, March 18, 1905, and a similar study published by Emerson in the same journal Jan. 6, 1906. As a type of renal irritation he cites that produced by violent muscular exertion, e. g., a boat race. The urine almost invariably contains serum albumen and casts with more or less blood, pus and renal epithelium. In short if one were ever ready to draw from the urine alone conclusions as to the pathological histology of the kidney, one would certainly call these cases acute nephritis. Two reasons, however, warn us not to do so. First, the rapid disappearance of all abnormalities from the urine in a few days; and secondly, the fact that in Dr. Emerson's and the author's investigations it has been shown that such urine is consistent with normal kidneys post mortem. The author emphasizes the fact that these evidences of renal irritation, albumen and casts, are not positive evidence of nephritis, which may or may not be present.

Renal insufficiency.—If the kidney cannot do its work, if it cannot excrete the products of nitrogenous metab-

olism, or if it cannot excrete water and the inorganic salts, we may get definite changes either in the urine or the functions of the other organs, uraemia, dropsy, and cardiac hypertrophy. A strong heart will pull the system along even if the kidney is badly damaged. Only when both members of this team fail do we get the changes characteristic of renal insufficiency. These are to be appreciated: (1) By changes in the physical characteristics of the urine; its twenty-four hour amount, the proportion of night urine to day urine, its weight and its color. (2) By that group of changes known as uraemia, dropsy and cardiac enlargement (hypertrophy and dilatation).

Nephritis.—The studies previously referred to have shown that while in chronic diffuse nephritis the diagnosis can usually be made from the history, the complete physical examination, and the urine, in acute nephritis and in chronic interstitial nephritis mistakes are frequent and inevitable, even with the most painstaking history and the most careful examination of the urine and of the whole body. In the interpretation of the evidence of renal irritation in its relation to the anatomical changes of nephritis, the most important aid is time. One may have any amount of albumen and casts, yet no nephritis, provided they do not persist. But chronic albuminuria with cylindruria usually means nephritis. The same is true of many of the other signs of what the writer calls renal insufficiency in their relation to an anatomical nephritis. Scanty urine, even anuria, or at the other extreme great polyuria with low gravity, may exist without nephritis; it is their persistence not their existence that is serious. The writer concludes the article as follows: 1. Functions, not histological appearances, are what we should strive to recognize in kidney disease. 2. Albumen and casts alone never prove the existence of nephritis. They may or may not accompany it. 3. The physical characteristics of the urine, the visceral evidence of uraemia, dropsy and cardiac involvement, are, with time our best help in the functional diagnosis of kidney disease. The dilution test, the concentration test and the quantitative estimation of the kidneys' capacity to excrete particular substances, may be valuable.

#### URINARY DIAGNOSIS VS. AUTOPSY FINDINGS.

R. C. CABOT, Boston, (*Journal A. M. A.* Mar. 18-25, 1905) presents a special study of the comparison between clinical diagnoses, made from analyses of urine, and the findings at autopsy. He takes the post-mortem diagnoses and groups the cases under nine forms of nephritis. Of 21 cases showing glomerular nephritis, only five were diagnosed in life as nephritis at all, and of these, three were called chronic diffuse and one chronic interstitial. There were 35 cases of chronic interstitial nephritis, of which 19 were recognized as nephritis of some variety, but only five were given the correct title. By these, and other tabulated examples, he shows how little dependence may be placed on the simple analysis of urine apart from other symptoms. Finally, he concludes that the present methods of urinary diagnosis are so much at fault that most of the time spent in urinary analysis is little better than wasted and the results obtained positively misleading. The most reliable data are those most simply and quickly obtained—the 24-hour quantity, the specific gravity and the color.

#### CYLINDRURIA.

C. P. EMERSON, Baltimore (*Journal A. M. A.*, Jan. 6 and 13), gives results of an exhaustive study of the subject of urinary casts based on the investigation of the records of all the cases of nephritis and those resembling nephritis, that have been admitted to the medical

wards of the Johns Hopkins Hospital, about 500 of which came to autopsy. The classification and formation of these casts are discussed in detail, and the study includes not only the casts, but also the accompanying conditions, the various forms of nephritis and kidney degenerations, acute and chronic, etc., as well as the non-nephritic conditions in which casts may occur. He says that casts occur wherever albumin might or does occur, but one may be present without the other. It is safe to say that it is the cells that are at fault. The lesion causing cylindruria may be very slight and temporary, some slight disorder of circulation or malnutrition of cells, as renal cells are among the most sensitive to the body. They may be a good index of the present condition of the cell, whether just irritated or totally destroyed, but they give no clue to the underlying conditions. It would seem indeed that the cells of a normal kidney could give a more lively demonstration of their disturbed condition by a vigorous output of casts than could those of a diseased kidney. The latter seems to be able to become accustomed to its condition and gives out no casts. While casts and albumin do not always run roughly parallel, the former are of much importance in following a case of renal disease. Their merely temporary appearance, no matter how alarming in number and variety, means a transient and probably not serious disturbance; their continuance for days, weeks or months, no matter how few, means chronic nephritis, and for them to remain two years means an incurable case. In nephritis a diminishing number, including fine granular and hyaline casts, means a subsidence of the acute process, while the reappearance of the coarsely granular, epithelial and bloody casts means a flare up. That they precede albumin in certain early cases of nephritis remains to be proved. In scarlet fever, the casts may outlast the albumin which ceases with the temperature, but in some cases there seems to be only cylindruria from the first and this ceases with the fever. In typhoid, pure cylindruria is not uncommon, and when albumin occurs, casts may become more numerous after its disappearance. Phosphorus poisoning may produce only casts and these abundant epithelial with the cells at all stages of fatty degeneration and fatty casts. Casts also occur in various acute infections, in the cancerous cachexia, in diseases of the central nervous system, in various lung diseases as severe bronchitis and pneumonia and in empyema. In conclusion Emerson emphasizes the fact that the casts alone are no index to the anatomic renal condition. They are often most marked in non-nephritic conditions, and in the most serious disorders that may be lacking. The more normal the cells the more readily do they form casts when disturbed; in chronic conditions there may be few or none. The duration of their occurrence is important and a case may be well followed by the casts. Epithelial, pus and blood casts are more common and of less significance than is generally supposed.

#### SIGNIFICANCE OF URINARY ANALYSIS.

N. S. DAVIS (*Journ. of the Minn. State Med. Asso. and The Northwestern Lancet*, May 1) in a discussion of the significance of urinary analysis in nephritis provoked by the published studies of Cabot and Emerson concludes:

1. That a pathological diagnosis is impossible in many cases of nephritis.

2. That in making a diagnosis, cause for the lesion, the condition of the blood and blood vessels and nutrition, and the existence of edema and of uremic mani-

festations, and not changes in the urine, are of the most importance.

The definite conclusions which can be drawn from an examination of the urine he describes as follows:

1. Albumin and casts are always significant of defective kidneys. The defect may be functional or anatomical, or both. But the converse of these is not true, for nephritis may exist when the urine is normal. A large quantity of albumin in urine means that many glomeruli are simultaneously incompetent and are leaking serum. But the converse of this is not always true; i. e., that small quantities mean that few glomeruli are at the time incompetent, yet it is true when applied to interstitial nephritis, for, although in kidneys affected by this lesion many glomeruli are actually destroyed and completely impervious, the disease progresses by the involvement of one microscopic area after the other, therefore few glomeruli are at one time leaking albuminous fluid, and, consequently, albumin is found in the urine only in traces. However, sometimes, when the lesion spreads rapidly or when an acute exacerbation occurs, the quantity of albumin may be increased.

But in many cases of acute and chronic glomerular nephritis in which the glomeruli are almost uniformly involved, albumin may be excreted in traces or not at all.

2. Red-blood corpuscles in more than very small numbers indicate an actively developing lesion, and therefore either an acute one or an exacerbation in a chronic one. However, again, the converse of this statement is not true, for red-blood corpuscles may be wanting in the urine from kidneys which are acutely inflamed.

3. A large amount of sediment made up chiefly of casts indicates an extensive involvement of the renal epithelium in pathological changes. The same conclusion is justified when the sediment is large in amount and contains a large proportion of renal epithelium. The presence of fat granules and droplets in large numbers, in and out of casts and cells, indicates an intensely severe lesion, and especially when it accompanies an acutely developed lesion often indicates one which quickly proves fatal. The same conclusion, I believe, is justified when we see an abundant sediment filled with coarse and fine granular casts of a deep yellow or brown color, providing there is not a general jaundice, and bile is not detectable in the urine. It is much more difficult to estimate the meaning of a few casts. Hyaline and finely granular ones I often see accompanying chronic constipation and acute and chronic digestive disorders. They promptly disappear when putrefaction and abnormal fermentation in the gastro-intestinal canal is stopped. If, however, they persist or constantly recur when digestion is good and when the stomach is not over taxed they often give a warning of approaching indurative nephritis. Severe physical exertion also will cause this temporary appearance of casts in the urine.

4. The best evidence which we have of the competence of kidneys to perform their work is by estimating from the specific gravity of the urine the total solids voided in twenty-four hours.

5. The relative amount of ammonia voided as compared to urea or total nitrogenous matter, is sometimes of use in roughly gauging the functional activity of the liver, for it is in this organ chiefly that the ammonium compounds in the blood are transformed into urea. Therefore we can conclude that if ammonia is eliminated in excess and urea in lessened amount, the liver, rather than the kidneys, is inactive. But it must be remembered, that if there is an excess of acid in the blood it may form compounds with ammonia which will effect the same result. This relationship of



ammonia to urea exists commonly in uremia and often is a warning of its approach.

6. It is undoubtedly true that sodium chloride accumulating in the tissues plays a part in causing edema, and possibly, as Widai asserts, is its only cause. Commonly, when edema is great, chlorides are deficient in the urine.

7. The recognition of the presence of indican or of combined sulphates in large quantities is important, because they indicate much decomposition of proteids in the intestines and the production of substances which are abnormal to the human body and which, when eliminated by liver or kidneys, may injure them, or at least tax their functional powers. They indicate an intestinal indigestion which must be corrected, especially when there is nephritis because it so often provokes uremia.

#### STUDY OF THE URINE OF INFANTS.

CHAPIN (*Archives of Pediatrics*, May 1906) details the results of a study of the urine of infants presenting the following series of cases, his service at the babies' wards of the New York Post-Graduate Hospital. The first series includes 86 cases in which some disturbance of the gastrointestinal tract was present. No attempt was made to classify these cases and they include simple indigestion, fermentative diarrheas, catarrhal inflammation and marasmus. In a large number the condition was not severe and such cases were purposely included in the list. Albumin was present in 75 cases in this series of 86. Its presence was noted as follows: trace 29; faint trace 31; heavy trace 15. Casts were present in 37 cases, noted as hyaline, granular, epithelial and mucus. There were sixteen deaths in the series, and of these fourteen had albumin present and ten both albumin and casts. In 32 cases an examination for indican was made and found present in 22 of the cases. The amount was estimated as follows: trace 4; faint trace 1; heavy trace 17. A series of 57 cases of pulmonary diseases, such as severe bronchitis, pleurisy and pneumonia, gave the following results: 49 had albumin in the urine, thus noted; trace 13; faint trace 30; heavy trace 6. Thirty-two cases had casts present, either hyaline, granular, epithelial or mucus. Of the seventeen deaths in this series, fifteen had albumin present and ten both albumin and casts. An examination for indican in 23 specimens showed its presence in 16 cases. Trace 2; faint trace 2; heavy trace 12. In 45 cases of general illness, other than pulmonary and gastrointestinal, albumin was present in 31 cases. Trace 9; faint trace 11; heavy trace 11. In 11 cases of cerebrospinal meningitis, 9 showed heavy traces of albumin and casts. It is evident that any disturbance of the bodily functions during infancy will often be accompanied by the presence of albumin and casts in the urine. From these results the writer concludes that the presence of a trace of albumin and a few casts does not necessarily indicate actual renal disease but may mean simple renal irritation accompanying a slight congestion and having no special significance.

#### AN ANALYTIC STUDY OF UREMIA.

A. C. CROFTAN, Chicago (*Journal A. M. A.*, Jan. 6) criticises the current theories of uremia, showing that neither anuria nor the variations of excrementitious nitrogen output suffice to explain the phenomena. Only when we determine separately the various groups of nitrogen bodies that occur in the blood and urine do we find abnormal conditions that may be deemed fairly characteristic. The two most important of these

are: 1. A relative increase of the ammonia salts, both of the blood and urine as compared to normal average values and as compared to the circulating and excrementitious urea. 2. A relative decrease of the urea, both of blood and urine as compared to normal average values and to the total nitrogen of the circulating and excrementitious nitrogenous waste products. There may also be highly toxic albuminoid or alkaloid bodies in the blood or urine that might have an enormous effect without appreciably changing the amount or relative proportions of the nitrogen content. As regards the inorganic salts, the most delicate tests, Croftan states, give little evidence that uremia is due to salt retention. That there must be some poisons acting in the production of uremia can not be denied. The decreased urea secretion, Croftan is inclined to think, is due rather to non-formation than to retention. It is not increased in the blood, as it should be if it were merely not eliminated, and the corresponding increase of ammonia mentioned points to the liver, as in it the bulk of the circulating ammonia is normally converted into urea. Disturbances of the kidney and liver, Croftan states, often are seen to go hand in hand, and he believes this would be found much more frequently if the liver were examined as thoroughly as the kidneys in every case of Bright's disease that comes to autopsy, and if mild functional disorders of the liver were as easily recognizable as like disorders of the kidney. Even if the kidneys primarily share the function of eliminating toxic matters some of the most important of these must pass through the liver before being finally eliminated by the kidneys. Even if the kidneys are primarily diseased more work is thrown on the liver, not only in its disintoxicating function but also in making up for the waste caused by a leaky kidney. The organ consequently becomes fatigued, its function of disintegration of albumins is impaired and less urea and more incompletely dissimilated intermediary products of albuminous metabolism are thrown into the circulation and intoxication results. Though this may thus follow or accompany renal disease, it is still due more to hepatic than to renal insufficiency. Hence the importance of recognizing early even mild degrees of hepatic insufficiency (particularly in renal cases and in pregnant women) and of safeguarding the patient against anything that may suddenly impose a strain on the fatigued liver. Instead, therefore, of stimulating the kidneys, the chief object of treatment should be to prevent development of uremia by attention to those organs that threaten to fail. Croftan advises first rest for the liver, even starvation for a few days, and in any case complete elimination from the diet of all substances irritating to the organ, and that every effort should be made to reduce intestinal putrefaction to a minimum. He would follow this by mild stimulation, the carefully guarded use of salicylates, of bile acids, possibly of calomel, and such dietetic and physical means as are available, all under careful supervision. For the acute uremic attack the most sensible procedure, he says, is bloodletting, a lost art that should be revived in such cases as these. The injection of a saline to replace the lost fluid can do no harm, especially if some salt is injected that can stimulate the hepatic function, e. g., salicylate of soda in normal salt solution, or a solution of sodium citrate or phosphate in proper molecular concentration. Symptomatically, he has seen good result from the use of such infusions.

#### THE PATHOLOGY OF THE KIDNEY.

W. T. COUNCILMAN, Boston (*Journal A. M. A.*, Jan. 13), first notices the complex structure and circulation of the kidney, its excessive blood supply, its marked

capacity for repair with slight capacity for complete regeneration of tissue, and the steady impairment of its structure with advancing age, due not only to arterial disease and wearing out, but also to the cumulative effect of slight lesions with constantly increasing inability to repair. The most easily understood kidney lesions are focal ones from bacterial invasion, either by way of the blood or through the urinary tract. Chronic congestion and urinary obstruction may also cause damage through pressure and interference with the circulation. How the damage constantly accompanying diffuse arteriosclerosis is produced is not known. The changes consist in destruction and degeneration of the parenchyma and increase of interstitial tissue, the latter being now generally accepted as secondary to the former. There is no evidence of an independent increase of connective tissue in arteriosclerosis. It is probable that the condition in the kidneys is the result of many factors rather than of any one. The greatest difficulty in understanding the pathology of the kidney is found in the acute, subacute and chronic diffuse lesions not connected with changes in the flow of blood or urine, nor with the immediate action of bacteria. Among these are noticed the acute interstitial non-suppurative nephritis due to the deposition and proliferation in the renal interstitial tissue of lymphoid cells from the bone marrow, spleen, etc., which occurs in acute infectious diseases, notably in the acute exanthemata. Why these cells accumulate in the renal veins is not known. Epithelial degeneration in varying character and degree is the most frequent condition met with in all cases of diffuse nephritis, often exquisitely focal and sometimes remarkably selective. Thus in diabetes, it only affects the cells of Henle's loops. The degeneration may range from very slight change to complete necrosis. Of the severer lesions of the kidney due to the diffuse action of soluble substances, Councilman notes one group in which glomerular lesions are most prominent. The most common cause of the glomerular affections he believes to be the acute infections. They may be acute, subacute or chronic. The other form of chronic nephritis, chronic interstitial nephritis, causing a slow destruction of all parts of the kidney, the glomeruli least and secondarily, with a marked increase of connective tissue, is usually accompanied by arteriosclerosis. It is a composite disease; not one organ, but many are affected. In this connection he gives the results of the anatomic study of the autopsies in cases of nephritis at the Boston City Hospital during the past ten years, and notices especially the marked heart enlargement in this form. The cases of amyloid infiltration are closely associated with it, but there is absence of heart hypertrophy. In the cases of chronic glomerular (parenchymatous) nephritis there also appeared to be a degree of cardiac hypertrophy, though to a less degree. The frequent association of acute glomerular nephritis with pneumococcal infection is remarked, as also that of the acute interstitial form with diphtheria. Certain conclusions are forced on one, he says, by the careful examination of the kidneys in a large number of autopsies. One is that the kidney affection is only a part of a more general morbid condition. Kidney diseases can not be considered as an entity; even the simplest bacterial lesions are secondary to infections elsewhere. Every acute infection probably leaves its traces in the kidney. Albumin and casts, though they mean injury to the organ, do not always indicate the severity of the condition, and too much importance may be attached to their occurrence. It is difficult to explain the association of lesions shown at autopsies, the cardiac hypertrophy and edema, and the numerous hypotheses that have been offered show our ignorance. It is not probable that anatomic studies can throw much light on

the obscure problems of renal pathology. Clinical, pathologic, chemical and anatomic methods must all be used, and the hypotheses offered tested by animal experiments. Only thus, and by reducing the questions to their simplest components, can such knowledge of chronic diseases as will permit us to form acceptable hypotheses for their explanation be obtained.

## MEDICINE.

### INTRAMUSCULAR INJECTIONS IN SYPHILIS.

RUTHFORD (*Northwest Medicine*, May 1906) in a paper advocating intramuscular injections of mercury in the treatment of syphilis gives his routine as follows:

(1) Inject moderate doses of a soluble form of mercury into the glutei at short intervals, daily, up to the patient's limit of tolerance or, as we say, until the patient is saturated.

(2) This condition of saturation I then aim to maintain until all active manifestations have subsided. I do this by close attention to glandular activity and the gums, and graduation of dosage.

(3) I now assume that the disease is under control and begin a very gradual reduction of the quantity of mercury exhibited, keeping a close look-out for evidence of recurrence of manifestations and giving special attention to hygienic measures.

(4) Having reduced the drug to a small quantity, say two small doses per week, I adopt one of two courses: (a) The periodic administration of an insoluble form of Hg or, (b) I discover and prescribe for each patient a form of the remedy that can be taken internally, or in lieu of this I prescribe intervals for taking inunctions.

The drugs at present used for injection are corrosive sublimate in aqueous solution; soziodolate of mercury in aqueous solution, super-saturated with iodine; hermophenol in liquid petrolatum; metallic mercury cream; and biniodide of mercury in olive oil. Of these the author prefers the soziodolate as being less irritant and more tonic in its effect than the other preparations.

### DIAGNOSIS OF EXANTHEMATA.

POYNTON (*British Medical Journal*, Feb. 4. 1905) discusses the diagnosis of scarlet fever, rubella, and measles. In scarlet fever the difficulty is not with the severe cases, but with the mild ones. The author is not yet convinced that the disease is not to be transmitted by desquamation: as long as the real cause of scarlet fever is unknown we are not justified in experimenting upon this point. Some physicians hold that influenza may be associated with rashes very closely resembling those of scarlet fever; the same is true of dengue fever. In German measles there are two types of exanthem: the morbilliform, which is more common and characteristic, and the scarlatiniform. Both last two or three days, are apt to itch, and may be followed by a fine branny desquamation. The most constant sequela is the occurrence of a secondary sore throat about the fifth day. As regards Dukes's so-called "fourth disease," an epidemic rubella usually classed under rubella, the author holds that its existence has not yet been proved, although he does not deny the possibility of its existence. He calls attention to the great value of Koplik's spots in the diagnosis of measles. Never crowd cases of measles together: if it is absolutely necessary, then pick out the cases of bronchopneumonia, as otherwise it will spread fast among them.



## DRUG THERAPY.

By C. A. Shaw, M. D., of Northfield, Vt.

The use of drugs preceeds any written record. Naturalists tell us that animals suffering from poison often select antidotes that afford relief. Savages from remotest ages have had their pet herbs and balsams, stories of whose potency passed down from generation to generation. It was a comparatively easy matter for the "Indian doctor" to make his selections and concoctions from the herbs and minerals then known and they probably proved more effective in curing the diseases of a savage people than they would today in ministering to the complicated disorders of highly civilized races. The skill of our predecessors is undoubted—they did not have the advantages of our dosemetric preparations of drugs, of antiseptic surgery and pathology. In cases that today would be relieved only by operating they depended entirely upon drugs empirically given and brought about marvelous results.

The pendulum swings back and forth and in the past few years drugs have been pushed into the back-ground—every tenth patient is subjected to an operation, two treated with change of climate and diet. Osteopaths, clairvoyants, electricians and quacks struggle with the regular M. D. for the few remaining. The desire for rapid modes of healing and in many cases the pronounced success of antiseptic surgery—accompanied by large fees—have crowded drug therapy to the wall. We rarely hear a paper upon drugs read at a gathering of medical men or see one printed in a medical journal.

Are drugs to be supplanted as a cure for disease? We hope not—we still have faith in their skillful application. Scientific research in the chemical laboratory has made possible almost endless combinations of simple substances but certain vegetable and mineral extracts and compounds are firmly fixed in our armamentum because they have proved of value in relieving pathological conditions.

In the "amazing maze" of drugs centuries have fixed a few guiding principles—as the use of quinine for chills, aconite for fever, morphine to quiet pain—but no hard and fast rules can be given for the use even of these "stand-bys." In drug therapy we must either in-

crease activity or sedate the different organs or systems found in the human anatomy. This is plain until we run into a series of complications which require just the right combination of drugs to save the life of the patient—and the reputation of the young practitioner.

I find that a drug which throws out a danger signal, as aconite, belladonna, morphine, is convenient to use especially in acute cases. If no improvement is noted when the full physiological effect is reached I conclude that my diagnosis of the case is faulty as under certain conditions drugs invariably produce certain results. In calculating the action of drugs the will of the patient must be considered. In treating hysteria, for example, is there any better way than to stay by and give our remedy until it overcomes the will of the patient? Will some doctor please suggest methods of treating hysteria successfully outside of a sanitarium?

One of the principal uses of drugs in general practice is keeping the *prima via* in a clean and antiseptic condition. This is a very important point in dealing with all disorders and especial attention to it eliminates many ugly symptoms. For cleaning and keeping clean the intestinal tract I have found mercurial preparations satisfactory. They have been under a ban but I doubt if there was ever a time when it was used more freely or more intelligently than it is today. As an illustration I call to mind two cases: In the southern part of the state a man was very ill and doctors from various points were called in council with the attending physician. The man had a rapid heart, some said myocarditis. At length it was suggested to thoroughly evacuate the bowels and he was given 15 grs. of calomel each day for five days. No salivation followed. The man was cured. A leading Vermont physician states that in his own case 10 grs. of calomel at night and a gallon of distilled water every day for eight days cured a severe attack of rheumatism where a previous treatment of salicilates for three weeks had failed to bring about satisfactory results.

The drugs we use daily are among the most wonderful and powerful of nature's creations. Their interest for a student never dulls as discoveries are often made and new combinations annually put upon the market. In spite of their frequent misuse through ignorance or depraved appetite and misapplication as in patent

medicines, drugs give daily relief to millions of the human race. As physicians, our problem is to carefully select and skillfully apply the material at hand so that, without other advertising, the cures effected will carry their own conviction.

**THE COUNTRY DOCTOR OBSOLETE.**—The country doctor is rapidly becoming extinct as a species. The men one meets at these societies, look, dress, talk and act, as the men do at any meeting of city physicians. The papers presented are quite up to the city standard, the discussions markedly above those of the city men. Therapeutics are discussed intelligently, scientifically, without undue optimism, without a trace of the silly pessimism too often assumed by the city physician to disguise his crass ignorance. The surgical experiences related would astonish some men who think the city clinics and clinicians do all of this work, or at least all that is well done.—*American Journal of Clinical Medicine*.

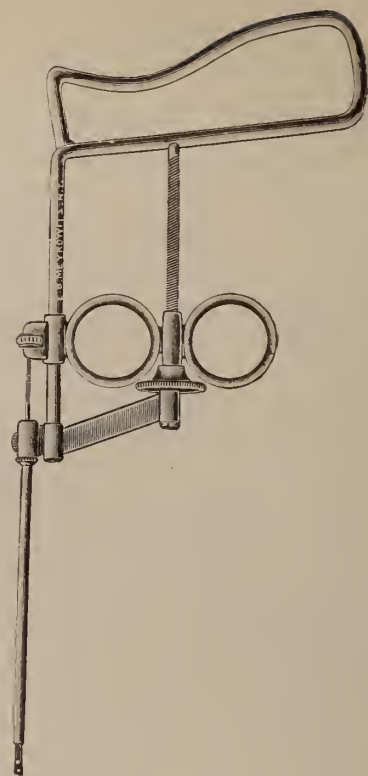
### A NEW NASAL SNARE.

Dr. T. Edward Duffee, of the class of 1903, University of Vermont, has designed a series of instruments for nose and throat work, the first of which is a nasal snare. The special feature of this instrument is the "pistol grip" handle, which allows the operator an unobstructed view of the field of operation and an easy natural position which does not cramp the hand or fingers. The nasal snare is made from nicked tubular brass, well reinforced and exceedingly strong and durable. The designer mentions the following advantages:

1. The direct draft decreases resistance, and with the index and middle fingers in the rings the operator gets a purchase which makes a much more powerful snare than any with which I am familiar.

2. The double carriage avoids binding when traction is made, at the same time reinforces the whole instrument so there is no springing even when considerable force is exerted.

3. When greater force is needed the large thumb screw (follower) is easily operated by the free hand.



4. The piston (wire rod) that passes through the cannula or barrel is adjusted by another smaller follower set inside a slot on top of the carriage so it can be made any length desired by simply turning the thumb screw (follower), at the same time it is held securely in place, thus avoiding slipping or flying back or out. At the distal end of this rod there are two small eyes where either end of the wire after being cut the length desired may be threaded and bent so as to lay close to the rod, then drawn just inside the barrel (cannula). This method of threading is a feature that saves much trouble and is common to one or more snares now in use. After being used the piston can be very readily pushed back to be rethreaded if desired.

5. It has no nuts to work loose, no wires to protrude or slip and its general simplicity of construction will, I believe, appeal to the busy and practical operator.

Patients with long and thick foreskins when suffering from gonorrhea are rather unfavorable subjects for a speedy cure. The prepuce seems to keep the urethra in an abnormally hyperemic condition, thus favoring microbial growth.—*International Journal of Surgery*.



## DYSPEPSIA IN ELDERLY INDIVIDUALS.

Optimism is ordinarily a virtue, but when carried too far it becomes failing. It is characteristic of most of us in the consideration of the various possibilities surrounding the complaining individual who consults us that we give first thought to the minor ailments which he may have and in a falsely optimistic manner leave from our consideration all thought of the graver diseases. Reflection will, I am sure, convince any one of the fallacy of this mental attitude; for where there are conditions making possible any of several disorders certainly we should endeavor, first of all, to exclude by all the means of our power the most serious of these, and then take into consideration the least serious.

In passing, I might suggest that were pulmonary tuberculosis the first instead of the last possibility considered in the case of every youthful individual with a cough and a record of lost weight, the mortality from this disease would be lessened. We can best serve the patient in such doubtful cases not by holding tuberculosis a dreadful thought to be put behind us and not to be mentioned, but, on the other hand, by tactfully but plainly making such provisional diagnosis as will give him opportunity to take those steps which would in its incipency lead to the healing of a tuberculous process.

Somewhat similar, and this is the error alluded to above, is our mental attitude toward the elderly patient who for the first time suffers from indigestion, or who late in life begins to have acute exacerbations of an old but previously mild dyspepsia. Such a patient may have cirrhosis of the liver—he may have chronic interstitial nephritis—but he may also have, and to this possibility I ask your especial attention, cancer of the stomach.

Exactly why cancer of the stomach is a probability in these cases it is difficult to say; but experience teaches us that such is the case. Ordinary indigestion is almost always due to some faulty habit of diet, the quality or quantity of the food or else the manner of taking it is wrong. Such habits are acquired in youth or early adult life, and the resulting dyspepsia quickly follows. The person who has passed through the toils and stress of early adult life and has by hygienic living preserved his digestion will not late in life change these

good habits. Advancing age carries with it many notable diseases and disorders of function, but disorders of digestion *per se* are not among them; so that the individual who has reached advanced or middle age without experiencing the discomforts of dyspepsia is not likely to do so unless some remote disease to which his age renders him liable becomes responsible.

These cases of dyspepsia in elderly individuals are naturally first seen by the family physician and on him lies the burden of omitting nothing in his consideration of the various possibilities. In hospital and consultation practice we do not usually see them until the condition has lasted some time and considerable progress of the disease has rendered cancer of the stomach a probability even to the casual observer. Then little can be done for the sufferer, although much might have been done a few months earlier.

As has been very aptly suggested, we have been educated up to the point of thinking immediately of cancer of the uterus when a woman who has passed a menopause bleeds from that organ; so why not give to the stomach the same consideration when, previously healthy, it begins in old age to show signs of disease.—*James S. McLester in The Journal A. M. A.*

## TREATMENT OF SNAKE BITES.

For several years I have averaged about two cases of bites of copperhead snakes a year, and finally hit on a plan of treatment which gives me such good results that it may be worth while to communicate it to others. My earliest experience with the use of caustics locally and whisky and ammonia internally was unsatisfactory in many respects, although I had no deaths. During the past year I treated for two months a fearful ulcer of the finger and hand which was caused by cauterization with caustic potash for snake bite. The final result was a contracted palm and stiff fingers.

Several years ago Dr. Thomas R. Brown published an account of some experiments with potassium permanganate as an antidote to the venom of snakes of the viper class, e. g., rattlesnakes, copperheads and vipers. Previously I had used this drug in a measure, but afterward I used it almost entirely, at first

hypodermically. Being refused this method of administration on one occasion, I used permanganate solution locally on compresses and apparently with good effect. Shortly after I hit on the plan I now pursue which gives me results incomparably better than anything I have known of heretofore. My plan is to freeze the area around the bite with ethyl chlorid spray, incise through the wound, usually making two parallel incisions of almost an inch in length through the two little wounds made by the fangs. Then I soak the part for a few minutes in strong permanganate solution and apply dressings wet with this solution. The edge of this dressing is raised up every half-hour or hour and fresh solution poured over the surface. The incisions, which are trifling, usually heal in a day. Certainly, so far as my experience goes, an incision in an area poisoned by snake bite appears to heal with extraordinary rapidity even in the absence of any effort at asepsis.

This method I have now used successfully in eight cases. I am inclined to attribute some virtue to the freezing by ethyl chlorid over and above the mere anesthetic effect. If the patient is seen within one hour after the bite, he is usually all right in two or three hours, with the exception of trifling swelling. The extension of the poison seems to be checked very shortly after this application. Internally I usually employ a few doses of strychnin, but occasionally use whisky and ammonia as well, perhaps out of respect to local prejudice.—*C. W. R. Crum in The Journal A. M. A.*

To obtain the best results in cases of Colles's fracture the patient should be placed under an anesthetic during reduction.—*International Journal of Surgery.*

The transformation of uterine fibromata into malignant growths is comparatively common, and hence the possibility of such an occurrence should always be taken into consideration in the prognosis and treatment.—*International Journal of Surgery.*

Among fractures of the carpal bones the scaphoid is the one most liable to be involved. This injury is often overlooked on account of the absence of the ordinary signs of fracture, but should be suspected in the presence of localized pain, tenderness and swelling over the region of the bone.—*International Journal of Surgery.*

In many cases enemas of water are dangerous because of the violent peristalsis incited. We have seen patients with appendicitis in agony for hours, because their physicians persisted in employing enemas of warm water, and utterly failed to note the consequent misery entailed or appreciate the danger incurred by such practice.—*Medical World.*

## BOOK REVIEWS.

INTERNATIONAL CLINICS, a quarterly of illustrated clinical lectures and especially prepared original articles. Edited by A. O. J. Kelly, A. M., M. D., Philadelphia. Vol. I, 16th Series, 1906. Published by J. B. Lippincott Company, Philadelphia.

This volume contains an excellent list of articles by prominent medical men, the sections included being treatment, medicine, surgery, obstetrics and gynecology and pathology. The section of progress in medicine during 1905, is especially helpful. The physician who subscribes for these volumes has a library of progressive medicine, which could probably not be duplicated in any form, outside of voluminous files of many medical magazines.

## BOOKS AND PAMPHLETS RECEIVED.

Report of the State Board of Health of Pennsylvania, 1904-05.

A Plea for the Neurasthenic, by David Alexander Shirres, M. D., of Montreal.

Report of the trustees of the Newberry Library, Chicago, for the year 1905.

Perjury for Pay, by Willis P. King, M. D., of Kansas City, Mo. Published by The Burton Company, Kansas City.

The Ground Waters of Vermont, from a Chemical and Bacteriological Standpoint, by B. H. Stone, M. D. and C. P. Moat of Burlington, Vt.

## SOCIETY NOTES.

The 21st annual meeting of the White River Medical Society and the 11th annual "Ladies' night" and banquet were held in White River Junction May 15. The subject discussed was "A New Treatment of Pneumonia." Dr. E. H. Careton was toastmaster at the after dinner exercises.

The annual meeting of the Connecticut River Valley Medical Association was held at Bellows Falls, May 22. The attendance was larger than usual. A number of papers were read and discussed. Officers elected for the year were: President, H. J. Sutcliffe Hill of Bellows Falls; vice-president, Dr. A. L. Dinsmore of Keene, N. H.; treasurer, Dr. E. R. Campbell of Bellows Falls; secretary, Dr. A. L. Miner of Bellows Falls.

The regular meeting of the Burlington and Chittenden County Clinical Society was held May 31, with a paper by Dr. A. O. J. Kelly of Philadelphia on "The Symptomatology and Diagnosis of Cholelithiasis and Cholecystitis, with especial reference to the indications for Surgical Intervention, based on the study of 216 cases." Discussion was opened by Drs. S. E. Maynard and H. C. Tinkham.



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## ORIGINAL ARTICLES.

### CEREBRO-SPINAL MENINGITIS.\*

*By Godfrey R. Pisek, M. D., Professor of Diseases of Children, University of Vermont College of Medicine; Adjunct Professor of Diseases of Children, Post-Graduate Hospital and College, New York.*

*Mr. President and Gentlemen:*

The recent epidemic of cerebro-spinal meningitis in New York City and vicinity has run its course, and the cases are now happily comparatively few. A considerable number of sporadic cases, however, have occurred and have been diagnosed in different parts of the country as a result of this epidemic of over 1000 cases. A review of the salient features of the disease based upon cases which have come under the writer's observation in hospital and private practice may help to establish the diagnosis and outline the treatment in the sporadic cases which occur in this community from time to time. It is not the writer's intention to make this an exhaustive (and exhausting) paper. The endeavor will be to give an average pen-picture of the disease and its management, sifting out the confusion generated by many reports of strange isolated cases and unusual forms of treatment based upon premature observations. A clear conception of the epidemic variety will lead to happier results in recognizing the sporadic cases.

Until Vieusseux of Switzerland in 1805 described cerebro-spinal meningitis as a distinct disease, it was often confounded with typhoidal and malarial infections. Many epidemics have occurred in this country and Europe since 1805, and small towns have suffered equally with the metropolitan centers. In New York

City it is endemic in character. The disease, without question, has its specific germ in the *diplococcus intracellularis meningitis*, first fully described by Weichselbaum in 1887, although Lichtenstern and Jager should receive due praise for their share in the work of discovery. This organism, fortunately of low resistance, gains access to the general system through the blood or through some local determination in the naso-pharynx, ear or eye, and in those with depleted vitality and lowered resisting force finds suitable soil for its propagation.

The spring of the year, after prolonged confinement to ill-ventilated and super-heated apartments, finds the greatest number of pre-disposed individuals. It is essentially a disease of the young. The writer's youngest case was twelve weeks old, although Rotch of Boston reports a case six days old. The second year claims the greatest number of victims.

In making post-mortem examinations of those dying with the disease, we find as a rule an exudative inflammation of the pia-arachnoid of the brain and spinal cord. The amount of infiltration found, however, often does not correspond to the gravity of the symptoms observed during the life of the patient. The degree of infiltration varies from an intense hyperemia to a fibrino-plastic or purulent exudate. This exudate is most marked at the base of the brain and along the fissure of Sylvius and the dorsal portion of the cord. In the ventricles is found a cloudy or opaque serum, and in a few cases pure pus. The effusion in the subarachnoid space, (and it must always be kept in mind that there is more fluid in the subarachnoid space in children than in adults) is increased in normal amount. The writer has found accompanying these changes in the brain and cord that the average case will have parenchymatous degeneration of the kidneys; degeneration of the heart muscles and the muscles in general. There will also be found in a number of cases multiple abscesses; septic joints and ecchymoses of the skin.

No attempt will be made in this paper to give any of the unusual symptoms found in the sixty cases studied. Suffice it that we keep in

\*Read before the Burlington and Chittenden County Clinical Society.

mind the symptoms of meningitis in general, viz.:—general drowsiness, vomiting, stiffness of the neck, incontinence of urine and feces, convulsions, delirium and coma. In cerebro-spinal meningitis the symptoms vary according to the type of the disease present. The malignant types are those which formed over 50% of the hospital cases observed, and fortunately are seen largely in the epidemics only and are responsible for the large mortality record.

The symptoms in the sporadic cases, those in which we are tonight particularly interested, will vary with the gravity of the local lesion and the intensity of the toxemia. In the average case we will get a history of a prodromal period, malaise, headache, chills, loss of appetite, body pains and some rise of temperature. Frontal headache, vomiting, restlessness, rapid pulse, herpes on the lips and nose, retraction of the posterior cervical group of muscles (or at least a resistance to the forward movement of the head), hyperesthesia, opisthotonos, convulsions, (particularly in infants and younger children) photophobia and irregularity of the pupils, loss of pupillary light reflex, nystagmus, neuro-retinitis (on ophthalmoscopic examination), stupor in varying degrees or delirium and later coma. The temperature curve is not pathognomonic and bears no relation to the prognosis. Ecchymotic spots and purpuric areas were seen in only a few of the fulminating cases, and the writer has yet to see them in a sporadic case.

The reflexes will help to establish the diagnosis, but must be interpreted with caution. Trousseau symptom, the tache cerebrale, is always obtained. The Babinski reflex, or extension of the great toe, is confirmatory but valueless in children under two years of age. Kernig's sign, which is obtained in all cases at some stage or other, is also present in all forms of cerebral irritation. The urine in the course of the disease often contains albumen and hyaline casts, the result of toxic substances in the blood stream. Loeffler and Gourand of France have lately called attention to the fact that in the beginning of the disease large amounts of urine of low specific gravity are passed, containing a high percentage of urea. An examination of the blood will help in the differential diagnosis. Leukocytosis, principally of the polymorphonuclear cells is present (mononuclear in tuberculous meningitis). Although the diagnosis can be made from the

clinical phenomena alone, confirmation and temporary relief from intracranial pressure symptoms is afforded by lumbar puncture and is also an aid in establishing the prognosis. The procedure is not difficult and if performed with aseptic precautions and a due regard for the anatomy, is productive of no harm. (Technique illustrated on cadaver and by specimens.)

Infants, in whom opisthotonos has not yet developed, may be placed over a pillow at the end of a table, the spine and overlying soft parts thus put on the stretch and the cord may be entered between the third and fourth lumbar vertebrae. This space is found by an intersecting line across the iliac crests and the spine. In older patients or those with opisthotonos it is necessary to keep them on their side and enter to one side of the median line. The needle of an ordinary good sized aspirating syringe cannot be improved upon for the procedure. Ten to 15 c. c. should be withdrawn, if the fluid flows freely, as this amount will include fluid from the cranial cavity. This should be caught in sterile tubes for examination. It is not wise to withdraw more than 30 c. c. or one ounce at a sitting. In infants with open bulging fontanelle, an amount can be withdrawn which will depress the fontanelle. Dry taps which occasionally occur are the result, nine times out of ten, of imperfect technic; the operator not reaching the spinal canal; needle obstructed with blood or fibrin; needle in the cauda equina, or where the exudative processes have occluded the connection between the ventricles of the brain and the cerebral and spinal subarachnoid spaces. (In well advanced cases this connection may be partially destroyed and the fluid flow very sparingly.) In the disease under consideration the fluid obtained is clouded or turbid, sometimes it is purulent. (Although in a small percentage, it is quite clear.) It contains the *Diplococcus of Weichselbaum* and in some cases in addition, staphylococci and streptococci.

The prognosis is unfortunately considered so bad by the general practitioner that the fight is half hearted, the treatment desultory and attention to details in nursing lost sight of. It is true that the mortality record is between 50 and 80%, the figures varying with the type of patients. My own records illustrate this point. In the hospital cases where all classes and conditions are received, moribund or



otherwise, 66% is the mortality record. In my private cases, 20%. Poor hygienic circumstances and ill nourished bodies have made the hospital cases a suitable culture ground for the infecting organism. We can base our prognosis on the following facts:

Sporadic cases have a natural tendency to recovery.

Initial symptoms do not as a rule indicate the subsequent course.

Mixed infections, as found in the spinal fluid, indicate a general septic condition and an unfavorable prognosis.

The younger the patient the more unfavorable the outcome.

Do not interpret as a sign of cure a temporary remission with return of consciousness from coma.

In only one of the writer's cases that recovered was there a permanent mental deficiency with partial paralysis of the lower extremities. Four cases, however, are hopelessly deaf from involvement of the labyrinth. Otherwise, their restoration has been all that can be desired. An examination of the specimen before you (taken from a case of malignant cerebro-spinal meningitis) showing the characteristic fibrino plastic exudate explains why so few cases recover from this intense toxemia and compression of the sensitive nervous centers.

Widely dilated rigid pupils, unvarying coma with slow pulse, subnormal temperature, general muscular flaccidity in infants and persistent opisthotonos in children are signs of a fatal termination. Interest centers in the treatment. The germ and their toxins must be combated. Preventative medicine demands that we control the more prevalent zymotic diseases and this ideal we can approximate by closer study of the individual cases. Detailed study of the portals of entry of the infecting organism has thus far failed to establish much that is new. Care of the naso-pharynx as insisted upon by Jacobi and Caille is a local measure productive of much good in the crowded centers. A higher standard of sanitary regulations in every community and a propagation of the doctrine to the laity of the out-of-door-fresh-air life will do much to annual the ravages of this disease. The keynote of the treatment, however, is conservation of the patient's strength by well regulated nourishment and skilled nursing. Thus will

nature receive assistance and the action of the germ be combated.

Widespread interest was awakened from time to time in the recent epidemic by reports of cures based upon premature or insufficient observations. Today, we have discarded the use of diphtheria antitoxin, lysol injections in the spinal canal, salicylate of soda in the rectum and other well meaning attempts to influence the course of the disease. *Care of the general nutrition and of the excretory functions on the one hand, and relief of pressure symptoms on the other*, will sum up the treatment of today. The patient should be isolated in a well ventilated room, the eyes shielded from the light, the head and neck raised upon a pillow thus relieving in part the congestion of the brain. The bowels are kept open by calomel and enemas. The diet, fluid or semi-fluid, of a stated quantity, and careful note kept of the amount ingested. Forced feeding if necessary by gavage. Water should be given freely. An ice bag is applied to the head if the temperature rises above 101° F.

Warm baths at 105° F. for twenty minutes, twice a day, with cold applied to the head, did more to produce comfort and give relief than any other one measure employed. While in the bath the naso-pharyngeal toilet is made with normal saline solution. Colonic irrigation promoted the flow of urine, stimulated the patient, and when given at a temperature of 80° controlled the higher rises of temperature. The baths will also prevent, in great measure, the formation of bed sores, and the change of position will be beneficial to the pulmonary circulation. If the above plan is followed, it will not be necessary to resort to much drug-ging for control of pain or reduction of temperature.

Bromides and chloral per rectum are to be preferred to the opiates. In mixed infections the Crede ointment still holds a place. Camphor in sterile olive oil hypodermatically, if stimulation is necessary. Sodium iodid is still used with the hope of influencing the exudative products of the inflammation. As to lumbar puncture: This procedure will be indicated for purposes of diagnosis. In infants where there is a bulging fontanelle, in children where MacEwen's sign can be elicited, or in all cases to control convulsions or sudden onset of coma. In other words, symptoms of intracranial pressure. Then it can be depended up-

on to give temporary relief. Treatment by repeated punctures as a therapeutic measure is unsatisfactory and has been abandoned. Thus, by supporting the patient's vitality by insistent feeding, alleviating pain and producing comfort to the nervous system by the baths, and temporarily relieving intra-cranial pressure by lumbar puncture, we may reduce the mortality of this dreaded disease.

### CEREBRO-SPINAL MENINGITIS.\*

*By W. S. Phillips, M. D., of Arlington, Vt.*

Within the past year this disease has made its appearance in various parts of the United States, pursuing as a general thing a rapid course not very amenable to treatment and attended by a fearful mortality and in which the cause, whatsoever it may be, has seemed to expend its influence mainly on the contents of the cerebro-spinal cavity. This disease, about which so many opinions have been and even now are held and from its wide spread or epidemic prevalence and unusual mortality, has excited very naturally much attention among physicians and alarm among the people. The disease has frequently occurred both in Europe and other parts of the East, and in our own country in times past.

From the best information I can obtain, cerebro-spinal meningitis prevailed as an epidemic in France in 1310, in Europe again in 1503 to 1528 and in Spain in 1557. It appeared in Rome associated with a catarrhal affection in 1580 and swept away 12,000 people, and, in like manner 12,000 at Venice and 2000 at Madrid, Spain. From 1700 to 1800 there were several epidemics, mostly in the southern part of Europe. In 1805 to 1808 it appeared again in Geneva. From this time to the present it has repeatedly appeared in the eastern countries; 1845 to 1848 it prevailed with great malignancy in Denmark, and 1846 and 1847 in Ireland, especially in the vicinity of Belfast. The earliest recorded occurrence of the disease in this country which I have been able to obtain is that at Medfield in Massachusetts in 1806 and Connecticut in 1807. From this time during the years 1807-8-9 it prevailed at many places in the New England

States, and by 1810 and 1811 the disease prevailed extensively in New England, New York and Canada. In 1862-3 it prevailed in a large number of localities both north and south. Some writers claim that since 1863 the malady has subsided as an epidemic though sporadic cases are frequently met with. But the disease during the winters of 1904 and 1905 has prevailed to considerable extent as an epidemic in a large number of localities in the United States as well as in Europe. In the examinations I have made into the literature of this subject I could mention many other epidemics at different times, but should I do so I would be compelled to extend this paper beyond what I originally intended.

#### SYMPTOMS.

There are no premonitory symptoms characteristic of the disease. From a state of apparently perfect health the patient is seized with the disease and without warning. Generally the attack is sudden. The most constant of the early symptoms are chills, sometimes mere rigors, but more often a severe chill. Pain in the head extending down the back of the neck, or even down the full length of the spinal column, is almost constantly present. Nausea and vomiting is one of the earliest as well as most common symptoms. The bowels have generally been constipated. Some observers, however, report severe purging, but my investigations show any form of looseness of bowels to be rare. Dr. Gallup reports stiffness and soreness of muscles of throat, neck and face. In the cases I have seen it has always been present.

Delirium is present in nearly all the cases, coming on the second or third day. It is one of the characteristic symptoms of the disease, and in a few cases is followed by coma, sometimes preceded by coma. The pulse is diminished in force and increased in frequency, yet I have often observed the pulse slower than normal, it varies in nearly every case, sometimes the pulse rate being 60 per minute and in a few hours increase in frequency to 120 per minute. The condition of pupils varies; sometimes dilated and again not changed. I have seen one pupil dilated, while the other remained normal.

In the early stage of almost every case the temperature of the surface is lower than natural, and oftentimes remains so. After re-

\*Read before the Vermont State Medical Society, October 13, 1905.



action, the heat of the body generally does not rise much, if any, above what is natural. Hirish says that in the cases observed by him the temperature was not on an average perceptibly increased as indicated by the thermometer in the axilla, though in a few cases it became excessive. The skin in the early stages is usually dry and cool. After a few days we often get a moist skin, occasionally profuse perspiration occurring at irregular intervals. The color of the skin is generally paler than natural, sometimes, however, it is cyanotic. Sometimes the face is flushed after reaction, rarely so if ever from the beginning. Spots of various kinds appear in a few cases. Petechia, as observed, seldom appear in the commencement of the disease, frequently the third day or later, while in the larger number of cases they are not seen at all. Most writers agree that their presence or absence has no import either in diagnosis or prognosis. They vary in size from a pin head to one-fourth inch in diameter. In the epidemic in New England from 1808 to 1812 Dr. Gallup reports them as seen one time in six. The tongue is often normal, but generally it has a whitish coating and is moist. After the disease has progressed for a time, rarely from the beginning, the tongue becomes brownish and dry. Respirations are slower than normal although there may be exceptions. As the disease advances the respirations become slower, and in severe and fatal cases, irregular.

The symptoms connected with the nervous system are the most conspicuous and important. Whatever symptoms are absent referable to other organs of the body, those symptoms which refer to the nerves are never absent. All the functions of the nervous system give evidence of some derangement. At some period of the disease two sets of phenomena appear: first, involuntary muscular action; second, paralysis of motions. The first is by far more frequent and gives us tonic spasms. This is a constant symptom of the disease and varies greatly as to its extent and severity. It appears at the commencement of the disease, but not in a marked degree until after the onset. It is preceded by a stiffness of the affected muscles as well as painful twitching of the same. It is a persistent symptom, usually continuing far into convalescence. The muscles affected are invariably the muscles of the back of the neck and the extensors of the back and

flexors of the limbs. Twitching of the muscles of the face are usually present. Opisthotonos is a very frequent symptom, as is also tetanic rigidity of the muscles of one arm, leg or finger. Convulsions are rare, but there is about the patient a general restlessness probably due to the pain which is felt and is expressive of distress.

Partial paralysis is common, sometimes of one arm or leg and of the muscles of the face. The loss of articulating power has been noticed. It seldom appears at the beginning of the disease and usually disappears slowly with recovery, but may prove persistent after recovery. Hyperaesthesia is nearly always present as a well marked symptom, and is associated with the tonic contractions of the muscles. It appears early and lasts until late in the disease. It affects the whole surface of the body and contributes largely to the restlessness of the patient.

The mortality, according to Hirish, is greatest the first four days of the disease; among the young; and at the beginning, rather than at the close of an epidemic. Niemeyer reports 126 cases with thirty-eight deaths. Hirish reports some 800 cases with 391 deaths. Dr. Lewis of New York reported a few months ago twenty-eight cases which he attended during the past winter with eight deaths. In 1035 cases in France there were 592 deaths. In the southern states during the war the disease prevailed extensively. One instance is mentioned where there were sixty-six deaths in 154 cases; another where out of forty cases twenty-four died. Of thirty-five cases reported by Dr. C. S. Young of Mississippi, every one died. There are few general complications. Among the special, pneumonia is the most frequent, which was common in the epidemic which visited New England in 1808 to 1812. Cases of this kind have been often noted, but there does not seem to be any good reason regarding the connection of these diseases as anything more than accidental.

It is a matter for regret that the blood during life has not been more frequently examined. But in all cases which have come to my notice, the fibrin has been increased in quantity and the same has been true of the corpuscles. The color of the blood has been bright. In several cases in which the blood was examined by Andral, the fibrin was found increased from 3.70 to 5.63 per 1000, the

normal being about 2.20 and the corpuscles from 134 to 143 per 1000, the normal standard being 131. Dr. Ames of Alabama examined the blood of 4 cases and found the fibrin increased at about the same ratio.

I cannot speak from personal experience of the post-mortem history, but have been able to collect the evidence afforded by a large number of cadavers and, as was observed regarding the symptoms which refer to the nervous system, it may be said that post-mortem changes are almost never absent from the cerebro-spinal cavity. The scalp has been frequently found congested and beneath it extravasated blood. The cranial bones have been found deeply colored with blood. I have seen no cases reported in which the dura mater gave evidence of disease, but in all the cases there was an abnormal fulness of the vessels. The arachnoid has not shown evidences of disease. The pia mater, unlike the two cerebro-spinal investments mentioned, has uniformly presented the appearance of disease. Rarely cases have occurred in which no structural change or exudation have been observed, but not one where congestion has been absent. The parts diseased are at the base of the brain near the optic commissures, the space behind the commissures, the pons varolii and medulla oblongata as well as the Fissures of Sylvius. Also the pia mater of the cervical portion of the cord has frequently been diseased. The exudation in some cases was found to be an increase of the sub-arachnoid fluid, especially at the base of the brain, but in most cases it is colored yellowish or red by pus or blood and varies in quantity from a few drams to several ounces. It varies in consistence from clear serum to an almost gelatinous condition.

In the class of diseases to which this seems to belong, to determine causes is confessedly one of the most difficult tasks, and nowhere is more positive light required than on epidemic causes. In general, they are clearly matters of inference and are unknown as regards positive evidence. We have to admit their existence, but can offer no direct proof of it. In all probability the disease depends on a specific external epidemic cause unknown save in its effect. Writers reporting this disease generally agree that it is not contagious. On the other hand most authors decide or are inclined to the opinion that it is infectious.

So far as treatment is concerned I shall not

dwell upon it here, but in the report following of two cases I have treated, the treatment will be briefly outlined:

Some twenty-five years ago was called to see Agnes S., female, age 11 years. Found her suffering with severe headache which, I learned was preceded by a series of severe chills, the attack was sudden with no premonitory symptoms, acute pain and tenderness the whole length of spine. Muscular tremors intermittent in character. Difficulty of controlling movements in standing or walking, no fever, face pale, skin cool, delirium of a boisterous nature came on the second day, bowels, constipated, hyperesthesia of the surface was a marked symptom, pulse 70 regular and weak, tongue normal, pupils dilated, had double vision, respirations 18. Nausea and vomiting persistent for two weeks. Retraction of the head and opisthotonos were marked symptoms during the whole course of the disease. Patient when lying on the back rested the back of the head and the feet on the bed. Between these two points the body was bent upwards so there was a space from four to eight inches between the back and the bed. This was not continuous, but occurred many times every day. Sometimes the muscular contractions were so severe that the head and feet came nearly together. Preceding these attacks of opisthotonos the patient uttered piercing screams or screeches immediately followed by the rigidity of the muscles of the neck, back and legs; patient very restless. Hemiplegia of left side appeared in the later stage of the disease. From the beginning of the attack to stage of convalescence was a period of about six weeks, although the paralysis remained for about three years. Apparently she has fully recovered from it, yet she has always been very nervous and excitable and is so at present. She married at the age of twenty-two and is the mother of four healthy children, which she is able to care for and perform her household duties in a creditable manner.

The treatment of this case I cannot give in detail. Ice to the back of the neck, bromides and quinine were among the remedies. Cathartics and Freleigh's tonic were the main reliance. This patient was seen by three or four other physicians who confirmed the diagnosis as one of cerebro-spinal meningitis.

On May 5, 1905, was called to see a child



three and one-half years old, female, rather frail, nervous temperament, although had never had any severe illness. Complained for about an hour of being cold and finally had quite a severe chill. Soon afterward and while playing about the room she screamed and fell backwards on the floor. After being taken up there was a stiffness about the face and neck, the head drawn backward and muscles of the back and legs very rigid. Soon vomited and continued to vomit every half hour for 48 hours. Although restless and uneasy she was in a semi-comatose condition for ten days. Every half hour for about five days she would scream and immediately the head would draw backward, producing opisthotonos. The bowels were constipated, skin pale, surface cool and very sensitive to the touch, pulse 60 and at other times 100 and 120, respirations slow and irregular, ranging from 12 to 16 per minute, one pupil dilated and did not respond to a strong light, delirium very marked, seemed to be frightened and nervous at a noise or loud talking, hyperesthesia very pronounced, even the slightest touch seeming painful. Urine scanty and almost colorless. During the first two days there seemed to be considerable difficulty in the act of deglutition and to articulate distinctly, tongue but slightly coated and moist. Toward the last of the illness the tongue became dry and brown. About the fifth day a petechial eruption appeared on the back and chest extending to about the fourth rib, both in back and front. This eruption consisted of brown spots about one-fourth inch in diameter and had the appearance of being extravasated venous blood. Did not disappear on pressure and disappeared entirely in a few days. About the eighth day the left arm and leg became partially paralyzed, but gradually disappeared as she recovered. At no time during her illness did the temperature rise above  $101^{\circ}$ . At the end of twenty days from date of illness convalescence seemed to be established. She has been very nervous and irritable since illness, and has not fully recovered the use of arm.

The treatment in this case was a tablet of calomel, ipecac and soda once an hour. The first day, gave this to move bowels, not having succeeded, gave an enema of salt and water without effect, the second day gave two tablets of the same, once an hour and on the third day bowels moved freely, continued to give these

to some extent whenever I desired to move bowels. Applied an ice bag to head and neck continuously for twelve days. Gave one-half teaspoonful elixir strontium-bromide every three hours and one-half teaspoonful Freleigh's tonic every three hours. Omitted bromides after fifteenth day and gave instead cod-liver oil cordial in teaspoonful doses every three hours. These last two remedies I continued until June 20, when I advised that she be kept out of doors and liberally fed.

I have failed to mention in the treatment of this disease the very satisfactory effects of deodorized opium. In a great measure it relieves the nervous condition and allays pain as well as the persistent nausea. Lumbar puncture may give temporary relief, but I do not believe that it aids the patient permanently.

#### DISCUSSION.

Dr. C. S. Caverly: The subject of acute infections of the nervous system, is one that is of peculiar interest to Vermonters. The first record in this country of this particular disease that Dr. Phillips has given us a paper on, cerebro-spinal meningitis, is, as he said, commonly said to have been in 1806 in Massachusetts. That same general outbreak extended over New England and gradually increased, until here in Vermont, we seemed to have had the most terrible outbreak or calamity of any kind that has ever befallen the state. He referred to Dr. Gallup's article and the late Dr. Gallup has made a complete description of the disease and history of that outbreak. Those of you who have seen Dr. Gallup's book will remember the quaint and interesting way in which he describes the disease which he does not call, you will notice, meningitis or inflammation of the brain, but he speaks of it, at the end of the epidemic which was in 1812-13, as "peripneumony." He had the idea that it was more a disease of the lungs and chest than of the head. He says that during the epidemic where the disease was chiefly located in the head, the chest organs seemed to be involved and where the disease seemed to begin and was chiefly in the chest, the brain was very frequently involved. There is no question but that this disease which we are discussing this morning, cerebro-spinal meningitis, is the same thing. Some idea of the terrible scourge that afflicted the state at that time, may be gained from the figures which Dr. Gallup gives in his book. I think I am right in saying that he estimated the mortality during the entire outbreak something like 6,000. That is a terrible death rate for 200,000 people. It seems to have started among the soldiers in Burlington during the war of 1812 and spread east and south, its force being felt chiefly through Rutland and Windsor counties. This may be because he was able to get more direct information from these counties. Dr. Gallup states in his book that many of the lower animals were affected with this disease, such as foxes and wolves and dogs, many dying with quite marked nervous symptoms. During the summer of 1894 we were afflicted over the Otter Creek Valley with an epidemic of acute poliomyelitis. There were 130 cases with a number of deaths during that epidemic. There is no doubt in my mind but that this disease was closely related to meningitis if indeed there were not true meningeal complications.

We do not know very much about the bacteriology of this disease but I believe those cases that died may have been true cerebro-spinal meningitis. For that reason I feel that there is without very much question, a certain relation, more than anatomical, between cerebro-spinal meningitis and acute anterior poliomyelitis. The epidemic which we have just been through in New York and New England during the winter and spring of the present year has called renewed attention to this disease and particularly to its bacteriology and it has been studied very carefully and thoroughly by Prof. Councilman of Boston. In summarizing his bacteriological findings regarding this disease he points out three germs, which, at one time or another, are responsible for this disease: the *diplococcus intracellularis meningitidis*, the *pneumococcus* and the *streptococcus*. We all know that cerebro-spinal meningitis and pneumonia increase during the winter and spring, reach a climax, and then gradually pass away during the summer. The late Dr. Gallup may not have been so far out of the way. He did not know anything about germs, but he did study clinical symptoms with intelligence. Dr. Councilman tells us that these germs are tided over from one outbreak to another and are found at times in the secretions from the nostrils and throat. I have not the time to talk about the channels of infection. This disease is interesting to us here in Vermont because we seem to be particularly predisposed to acute diseases of the nervous system and because of the seeming relationship between pneumonia and meningitis. With regard to treatment,—nothing seems to have been developed. Diphtheria antitoxin has been used but has proven a failure. I gave to one case, or rather Dr. Townsend did, in 1000 unit doses and it did relieve the symptoms temporarily, the delirium improved, fever dropped, but the patient died. We gave three doses, twenty-four hours apart. Lumbar puncture has proven useful in making a diagnosis, as well as relieving pressure symptoms.

## TWO CASES OF INFANTILE SCURVY.

By Bern. D. Colby, A. B., M. D. of Sudbury, Vt.

Constant alertness is the price of correct diagnoses. Constant repetition cultivates alertness. This is my plea for bringing before you to-day the subject of infantile scurvy.

Synonyms.—Infantile scurvy, infantile scorbutus, Barlow's disease, the latter term especially in Germany.

Definition.—Holt defines it as follows: "Scorbutus is a constitutional disease, due to some prolonged error in diet. It is characterized by spongy, bleeding gums," etc. As the etiology is not absolutely settled as yet my definition would omit "due to some prolonged error in diet" making it: Infantile scurvy is a constitutional disease, occurring in children." It is characterized by spongy, bleeding gums, swellings and ecchymoses about the joints, especially the knee and ankle, hemorrhages from the nose, and occasionally from other mucous membranes, extreme hyperaesthesia, and often pseudo-paralysis of the lower extremities."

History.—"For our present understanding of the disease, the profession is indebted chiefly to the work of the English physicians Cheadle, Gee and Barlow, especially the last named, who in 1883 made a full report upon 31 cases of scorbutus in infants and young children, in which publication the etiological factors and clinical history were worked out so fully that but little has since been added to the subject. \* \* \* To Northrup is due the credit of bringing the subject prominently before the minds of the profession of this country."—Holt.

Etiology.—There are three theories regarding the cause of scurvy: First, that the elements of food are insufficient to maintain proper health; second, that the food contains toxic principles; third, that it is an infectious disease. Nearly all cases of scurvy in children are found in those less than two years old. Both sexes are equally affected, nor does season influence frequency. The insufficient nutrition theory is supported by reports of cases by Henry, McGrew and Öller in which scurvy occurred in people living on one variety of diet exclusively. That a large number of cases of infantile scurvy occur in children fed on condensed milk and patented foods is urged in this connection. Bachstrom, in 1734, was the first to claim that a lack of vegetables was a cause of scurvy. Garrod attributes the disease to a lack of potassium salts; Ralfe that "the disease is due to diminished alkalinity of the blood because of the absence from the food of the vegetable salts—malates, citrates and lactates—the alkalinity of the blood depending on the carbonate, which is derived directly from these salts. The same results are produced in scurvy as when the normal alkalinity of the blood is reduced by injecting acids or by feeding them in excess to animals." The theory that it is caused by toxic principles in food is argued because cases in animals and man have been associated with tainted food. This will hardly hold with infantile scurvy for though some may be fed on tainted milk certainly some cases occur in which the diet is free from taint, being sterilized.

The infectious theory is not without evidence. The disease occurs endemically and epidemically. It is not confined to man but has been found in horses and dogs, the gorilla, the goat and sheep. It has been experimentally produced in rabbits by injecting the blood



of scurvy patients (Murri and Petroni). "Borntraeger isolated a coccus from the minute hemorrhages in the spleen of persons dead of the disease. Home believes that scurvy is an infection of the mouth with various micro-organisms from decayed food. Babes thinks that scurvy is a hemorrhagic infection. The virus enters the mucous membrane of the gums, and is absorbed from there into the surrounding blood vessels. He discovered fine bacilli in excised pieces of gums. Rabbits when injected with bouillon containing pieces of the gums, had hemorrhages, and died after six to eight days with symptoms like scurvy. He secured pure cultures of this bacillus, and differentiated it from the streptococci also present in the gums. He believes this bacillus to be the cause of the gingivitis, and that it exists normally in the mucous membrane of the mouth, but can act only under conditions which diminish the resisting power of the body. Test and Beri describe a micro-organism found about the teeth which they believe causes scurvy. It is a diplococcus. Experimentally leisons similar to those in scurvy were produced. They considered the disease a toxemia."

Whatever theory is held as to the immediate cause of the disease whether nutritional, toxic or microbic, one fact remains, upon which all are agreed, that improper diet is an important if not necessary factor, whatever the theories as to its workings. It occurs almost exclusively in hand-fed children. E. M. Sill in the *Medical Record*, Dec. 27, 1902, reports 179 consecutive cases of infants fed with pasteurized and sterilized milk, and found in 97% of them unmistakable signs of rickets and scurvy, least marked in those cases where the feeding was supplemented with a small proportion of breast-feeding. Sterilized or pasteurized milk, he says, is to the infant what canned or salt food is to the sailor. In a discussion of scurvy before the 53rd session of the A. M. A., Abraham Jacobi says: "I have found that over-sterilizing milk will give rise to scurvy; though it would be a mistake to consider the exclusive use of sterilized milk in the feeding of babies the only cause of scurvy." In the *Philadelphia Med. Jour.* April 27, 1901, Louis Starr "classifies the faulty foods as follows, in the order of their potency: 1. The proprietary infant's foods administered without the addition of cow's milk. These foods

are responsible for the greatest number of cases, and which variety most readily induces the disease depends chiefly on the extent of employment or the fashion at the time. 2. Proprietary foods employed with the addition of insufficient quantities of cow's milk. 3. Oatmeal or wheat gruel, barley and other farinaceae, administered with water alone or with water and insufficient cow's milk. 4. Condensed milk and water. 5. Sterilized milk; properly modified milk mixtures subjected to a temperature of 212° F. from 30 minutes to an hour or more. 6. Too dilute milk and cream mixtures; laboratory mixtures with too low albuminoid percentage.

Pathology.—"There is a general tendency toward ecchymosis formation, extravasation, mucous hemorrhage, and oedema of many tissues, especially subcutaneous. There is also a diminution in the number of red blood corpuscles and the hemoglobin in them. Swelling of the shaft of the femur has been noted due to subperiosteal hemorrhage also separation of the lower epiphysis from the shaft. Sometimes other bones are involved, notably the tibia and humerus, of the long bones, the scapula and cranium of the flat. Parenchymatous changes take place in the liver, heart, kidney and spleen. Hemorrhages into the lung have been reported.

Symptoms.—Usually the first symptoms noticed are tenderness in handling and irritability during the day and some restlessness at night. Without treatment these symptoms increase in severity until, if the child has been walking, he refuses to walk and cries with pain if he is moved. The limbs lie helpless as if paralyzed. As the disease progresses, there is swelling of the affected limbs and perhaps other bones are involved. Ecchymoses appear in various parts of the body, often about the affected legs, sometimes about the eyes. Hemorrhages behind the eye-ball may cause protrusion of the eyes. The gums become swollen and in some cases bleed. The amount of food taken is diminished, whether due to sore gums or anorexia is a question. There may be hemorrhages from the nose, ears, kidneys or bowels. There is anemia and cachexia. In the last stages there is sometimes fever. In older children there may be hemorrhages from the stomach and falling of the teeth. In cases of recovery there is a flabby condition of the muscles and the limb may be smaller than the

other. The atrophy is general, due in part at least to non-use, and not in any special group as in paralysis (poliomyelitis). The last symptom is one not mentioned in any works I have seen on the subject and for a time made me wonder if one of my cases had not had a spinal lesion.

**Diagnosis.**—The diseases for which scurvy have been mistaken are rheumatism, anterior poliomyelitis, neuritis, osteomyelitis and syphilis. Gee reports a case in which the only symptom was hematuria. Careful attention to details will usually suggest a change of diet which furnishes the most important diagnostic feature of all, viz.: "Definite and rapid amelioration of symptoms by anti-scorbutic regimen." (Barlow).

**Prognosis.**—Taken early, with proper treatment, rapid and permanent cure. Treatment begun late, digestive or other complications arising, death is not unusual.

**Treatment.**—"Discontinue all proprietary foods and condensed milk, and give an abundance of fresh cows' milk, beef juice, orange juice or other fresh fruit, and, in cases that are over a year old, potato. In addition, iron and cod-liver oil may be required later, but the essential thing is the change in diet. The tenderness requires that the child shall be kept as quiet as possible, and its cachexia that it be protected against cold and exposure."—(Holt).

Case I. On August 24, 1904, I was called to see a boy 18 months old. He was the first child of healthy parents, both in early life. Their home was in Hartford, Conn. They were spending their summer vacation in one of Vermont's summer resorts and had been there about a week. The child had been given a little cart and had drawn it about the lawn. A day or two before I was called in, he was seen to limp in the left leg and was a little "fussy," but the parents attributed the trouble to a strain drawing the cart and amused him in other ways. Still, he grew worse and I was called. Careful examination revealed nothing but the lameness and some tenderness of the leg. The parents said he had not slept as well as usual, being somewhat restless. The digestion was good, the bowels regular. However he would eat nothing but a certain proprietary food with milk. Did not like fruit, cereals or anything but his prepared food. After a careful study of the

case (and Holt's Diseases of Children) I concluded that the disease was scurvy and treated him accordingly. The parents, at once, got him to eating fresh cow's milk, fruit and a little potato. He objected at first and would not eat well but Vermont air gave him appetite and soon he was glad to eat what he was offered. Improvement was immediate, the restlessness at night was relieved. The lameness was less though it persisted during his stay in the country, which was about a week longer. A year after, a friend of the family told me that the improvement continued, and at that time he was a strong healthy boy.

Case II. R. M., male, born July 17, 1904, eighth child of mother, forceps delivery. The mother was 38 years old, healthy but not strong. The father is a farmer in good health, 41 years of age. Up to September, 1905, nothing of special interest occurred in the health of the child. It had been weaned from the breast in March preceding and fed on cows' milk, sometimes diluted, sometimes clear. Sept. 27, I was called to treat him for diarrhoea. It resisted treatment and finally I fed him for a few days on Just's Food, exclusively. After a week, he was better and the feeding was composed of milk modified with the food, increasing the proportion of milk until he was taking whole milk again. He took but two boxes of the food in all. Oct. 29, I was again called to see the child. He began limping in his left leg, was restless, perspired easily, especially at night. Excepting the sweating there were no signs of rickets. The appetite was poor. Food was well retained. The bowels were constipated, the stools almost a clay color. There was a little swelling about the knee, the whole leg seemed tender. Sleep was disturbed during the night and during the day he was fretful. At this time he would walk a little though with a limp.

I have never seen the gait described in any literature, so permit me to enter into detail a little. Both my cases had the same action in moving the afflicted member. I do not know as it is pathognomonic of the disease but the next time I see a child with that peculiar gait I shall at least think of scurvy. The leg hangs limply while the foot is being brought forward, the foot abducted and the leg is swung outward by a movement of the body as if to avoid all



movement of the muscles of the leg. The leg is not moved stiffly as in diseases of the joints, where there is spasm of the muscles about it, but the whole leg is swung like a rag around to the front, until the step is taken, when the foot strikes the floor still much abducted. There was no rise in temperature excepting on the fourth day after I saw him when it was 100 F. axillary. The gums were swollen, especially on the lower jaw.

He had his incisor teeth and the first molars, but the swelling was so great that the molars were about covered. There were no hemorrhages. My treatment was directed mainly to getting the liver more active, giving calomel and eliminants. His condition grew worse. From walking with a limp he stopped altogether. The restlessness at night increased and he was so tender along the leg and back that I examined carefully for that protean disease, cerebro-spinal meningitis. However there was no rigidity of back or neck. At this time I ordered plenty of orange juice and cereals, well-cooked. From taking food in small quantities with reluctance, he was very fond of the fruit juice and improvement in every respect was immediate. The appetite and digestion improved and soon we had him eating baked potato. The tenderness disappeared. The increase in diet was begun Nov. 5 and on the ninth he was sitting up playing, when before he cared for nothing so much as to be left alone. Nov. 20 he was creeping all about and in another week walking, at first with the limp above described, stumbling easily, but gradually improving. As improvement continued the limp disappeared, excepting when he tried to run. At present, four months since the trouble began, there is no limp, though there is a little tendency to stumble with that leg. The leg is a little smaller around than the other. I tried at different times to get a patellar reflex but could not in either leg. There was more or less anæmia. There were no signs of paralysis in any muscles—simply weakness. With improvement in the soreness of the muscles and lameness the general health improved until now he is the picture of health. The treatment besides the diet was directed toward keeping the bowels open, caring for the digestion and, a little later, a preparation containing the phosphate of iron in combination with sodium, calcium and potassium phosphates.

Conclusions—The etiology of infantile scurvy is not yet satisfactorily proven. Improper feeding, especially artificial feeding, seems to be an important factor. Occasionally scurvy occurs in a breast-fed child, when a child previously fed on the same thrived, indicating individual tendencies to the disease. Proper diet relieves the symptoms at once, thus pointing to a dietetic cause. Still, might we not, with equal validity, argue that want of fresh air and proper food were the causes of consumption because it occurs more frequently in persons in confinement and is improved by forced feeding and open air treatment?

2. In the reaction from the old-time custom of feeding babies everything on the table, may it not be that there is a tendency in these days to over-regulate infants' diet and feed too much by theory?

3. In these days when patent foods are so numerous and artificial feeding of infants so common every physician should keep in mind the possibility of scurvy.

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### STANDARD REMEDIES IN THE TREATMENT OF DISEASES.

By J. H. Judkins, M. D., of Northfield, Vt.

In the discussion of what may constitute the standard potency of any preparation we have no better guide than pharmacopœie and dispensatory. The busy practitioner too often depends upon the printed label without knowing that the preparation is up to the required assayed strength. The physician in short should know absolutely the strength and quality of a preparation before prescribing.

The three important and much used drugs, digitalis, belladonna and hyoscyamus are examples of drugs to be closely watched by the physician to see that they are up to the standard strength. Tinctures from these drugs are placed on the market in widely differing qual-

ities. A few concerns may send out reliable products of these three drugs but more concerns fail to bring laurels or a glimmer of hope by placing in the physician's hands preparations which warrant expected results. Let us first consider *digitalis purpurea*, the most used of these well known drugs. The foxglove plant grows wild in the temperate parts of Europe, and in this country it is cultivated both for ornamental and medical use. The leaves are the part used and are gathered in the second year. As foxglove deteriorates quickly the crude drug is of questionable value when it reaches one year old. The preparations mostly used are the tincture and infusion. The dose of a standard tincture preparation is approximately five minims. In all forms of valvular lesions of the heart when hypertrophy is not compensatory *digitalis* is very useful. In aortic regurgitation *digitalis* does harm.

*Belladonna* grows wild and cultivated in England. It is also imported from Germany. It is a native of Europe but grows vigorously in this country under cultivation. Leaves of this plant which have been kept long should not be used as they undergo change through absorption of atmospheric moisture and losing a portion of their nitrogenous matter. The dried leaves as they occur in the American market appear to vary remarkably in the percentage of alkaloid. The best are fully equal to the finest English leaves. The action of *belladonna* upon the system is that of *atropine*. While *Belladonna* was formerly used externally to discuss scirrhus tumors and to heal cancerous and ill conditioned ulcers and the equally observed homeopathic suggestion of preventing scarletina, it has a wide and important field of usefulness. Rubbed upon the areola of the breast it has been found to arrest the secretion of milk and upon the abdomen, vomiting of pregnancy. Applied to the cervix of the uterus to hasten tedious labor when due to rigidity of the os. Spasmodic strictures of the sphincter muscles are relieved by the local application of the drug. The hypodermic injection of this remedy is claimed to assist in the relief of strangulated hernia.

*Hyoscyamus* or henbane grows in Great Britain and the continent of Europe, also in the United States, in great abundance in

Michigan. The leaves of the second year are preferred in medicinal preparations. The temptation to place upon the market the first year's leaves makes this drug as found in the market the same as *digitalis* of uncertain strength. *Hyoscyamus*, while extensively used by the ancients, has fallen into disuse. Its range of therapeutics includes only a few nervous conditions, and various pectoral diseases with cough, also to prevent griping by the vegetable cathartics. These three drugs are spoken of separately as they represent a class of remedies in which the profession are in a great measure indifferent as to quality.

The temptation of the profession today is to prescribe proprietaries. The simplicity of prescriptions which has existed in the past is giving away to elegant pharmaceuticals and palatable prescriptions. The busy practitioner oftentimes prescribes a proprietary remedy of which he knows nothing of the composition, his only knowledge of its worth being the advertised assurance of the manufacturer that it cures certain diseases. The patient whom the physician holds on his list and continually prescribes the proprietary remedies, begins to study his or her treatment, especially if the name of the preparation becomes known. It would be strange if that patient did not suggest an improvement in the treatment, a more palatable preparation, or a preparation of a different manufacturer. It is this method of prescribing which may worry the physician and keep the patient in a state of constant unrest.

Only standard preparations of the best quality, whether fluid extracts, tinctures, pills or tablets will give us favorable results. The tincture or fluid extract which has precipitated its active principles will disappoint us. The pill that has an insoluble coating cannot but disappoint us. The tablet which cannot contain or represent what is claimed cannot aid the physician. Last and by no means least important is the adulteration of drugs. We find this practiced in preparations where we least suspect. Preparations of cascara containing aloin, codeine containing morphine, quinine containing cinchonidine. State legislation and the cooperation of the profession will in time regulate this evil.



## Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the Medical Sciences.*

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### EDITORIAL.

Since our last issue most of the medical schools of the country have held their commencements and a horde of young doctors has been poured from the shelter of college walls to face new and greater trials, first at the hands of the various state boards and finally at the mercy of a sick public. A study of the faces of one class of these young men has impressed the writer with the severity of medical education at present. These men all bear the unmistakable traces of hard, strenuous toil. The requirements of medical education have been and are still climbing higher and higher until now the privileges of practice, which were formerly conferred after one or two periods of a bare three months of study are now granted only after four years of nine months spent in exacting study within the college and even then very few indeed of these men consider themselves fitted to practice medicine without one or two years of gratui-

itous hospital practice. Not only in the medical course is the standard rising but the requirements for admission to these schools are also being steadily pushed up, partly by the initiative of the institutions themselves and partly to satisfy the more and more rigid requirements of the state licensing boards. There is no profession which requires so long a preparation and which rewards this long period of probation with so little of this world's goods. Not only do these advancing requirements strike the individual aspirant for a medical degree but the very colleges themselves which are raising the standards are seriously affected by the resulting decrease in students. The unendowed medical college must face a struggle for its very existence and it is only by the unselfish devotion of faculties and teachers that these colleges which have been and are still turning out the best material can continue their work.

A considerable amount of correspondence has been going the rounds of the medical press recently, regarding the country doctor and his practice. One writer holds that the man who practices in rural districts should be able to do all kinds of surgery, be up on the various specialties, including the knowledge of refraction, and be equipped for exhaustive chemical and bacteriological work. This position has been attacked by several physicians in different parts of the country, who hold that such knowledge is not only incompatible with good work, but altogether impossible. The question to a great extent, answers itself in the actual experience of men in country and general practice. Specializing has without doubt, been carried to an unwarranted extreme, and the pendulum is no doubt swinging backward. But the very extreme has brought about the knowledge of safer and less complicated methods of doing many things which were formerly considered most dangerous for the unskilled. Thus the country

doctor has often been enabled to perform successful and finished operations where before there would have been haphazard work, with indifferent results. In this regard only is the position of the first correspondent tenable. We do not believe that an unskilled practitioner is warranted in undertaking any important procedure, except under stress of circumstances, when so many opportunities are available to become proficient in the medical and surgical specialties. This does not mean that the present country doctor is any less versatile than his much-lauded predecessor, but that he is better educated, and understands the dangers of bungling work. Each man naturally has some line in which he excels, and if these natural bents were developed consultation between country practitioners would be more practiced and more successful.

## NEWS AND PERSONAL ITEMS.

*We desire to make this column of personal interest to all. Physicians are requested to send news items.*

### VERMONT.

The 38th annual School of Instruction for Health Officers was held at Burlington, July 9-12, under the supervision of the State Board of Health. The following program was carried out:

#### MONDAY EVENING, JULY 9

Introductory remarks by the President of the State Board of Health, Charles S. Caverly, M. D.  
Address, Governor Charles J. Bell.  
Address, Hon. Frederick Fleetwood, Secretary of State.  
Address, T. R. Stiles, M. D., Member of the Board.

#### TUESDAY MORNING, JULY 10

Paper, Hygiene of the Schoolhouse, by Hon. Mason S. Stone, Superintendent of Education.  
Discussion, Henry Tucker, M. D., Brattleboro; C. W. Noyes, M. D., Burke.  
Paper, Contagious Diseases in the School, by J. W. Copeland, M. D., Lyndonville.  
Discussion, H. A. Elliott, M. D., Barnet; Joseph Breitling, M. D., Lunenburg.

#### TUESDAY AFTERNOON

Paper, Venereal Diseases a Peril to the State, by Fred C. Valentine, M. D., New York.  
Discussion, W. W. Townsend, M. D., Rutland; Lyman Allen, M. D., Burlington; Maj. Charles E. Woodruff, M. D., U. S. Army.  
Paper, Public Opinion and Preventative Medicine, by H. L. Stillson, Bennington.  
Discussion, W. T. Slayton, M. D., Morrisville; C. W. Peck, M. D., Brandon.

#### TUESDAY EVENING

Paper, Sewage Disposal, by George C. Whipple, C. E., Consulting Professor to the Brooklyn Polytechnic Institute.  
Discussion, Edward R. Clark, M. D., Castleton; C. H. Hazen, M. D., Corinth.

#### WEDNESDAY MORNING, JULY 11

Paper, Advisability of Notification in Tonsillitis, Pneumonia, and Cerebro-Spinal Meningitis, by R. H. Miner, M. D., Rutland.  
Discussion, William Lindsley, M. D., Montpelier; D. C. Noble, M. D., Middlebury.  
Paper, Sanitary Laws, by Robert Lawrence, Esq., Rutland.  
Question Box.

#### WEDNESDAY AFTERNOON

The Vermont Society for the prevention of Tuberculosis will hold a Symposium on Tuberculosis.

The Directors of the Vermont Sanatorium, Carroll S. Page, Olin Merrill, William N. Bryant, George Aitken, D. D. Burditt, F. G. Butterfield, Daniel C. Noble, Emily Dutton Proctor, Redfield Proctor, Jr., Frank C. Partridge, Charles S. Caverly, Frank H. Brooks, P. J. Barrett, and H. C. Tinkham, will be present at both afternoon and evening sessions and will participate in the discussion of different phases of the subject.

The members of the Vermont Tuberculosis Commission will also be present.

Paper, Prevention of Tuberculosis, by W. N. Bryant, M. D., Ludlow, Secretary of the Board of Directors, Vermont Sanatorium.

Paper, Compulsory Notification in Tuberculosis by all Physicians, by Thomas Darlington, M. D., Health Commissioner, New York City.

#### WEDNESDAY EVENING

Paper, Relative Merits of Sanatorium and Home Treatment of Tuberculosis, by Herbert N. King, M. D., Physician in Chief at the Loomis Sanatorium.

Discussion by gentlemen of Board of Directors and others, followed by election of officers of the Vermont Society, and other business.

#### THURSDAY MORNING, JULY 12

Paper, Pure Foods, by H. W. Wiley, M. D., Chief of Bureau of Chemistry, United States Department of Agriculture.

Discussion, Joe W. Jackson, M. D., Barre; J. P. Gifford, M. D., Randolph.

Paper, The Medico-Legal Work of the State Laboratory in Its Relation to the State, by Prof. H. L. White, Medico-Legal Chemist to State Board of Health.

Discussion, Hon. S. Hollister Jackson, Barre; Hon. Warren R. Austin, St. Albans.

Dr. J. E. Burke has left Sutton and is now practicing at West Burke.

Dr. R. Bosworth has associated himself with Dr. E. M. Nicholls at Barton.

Dr. V. M. Rogers has removed from Middlebury, where he went a few months ago from Quechee, to Johnson.

Dr. Walter H. McGoff of Montpelier and Miss Clara Mae Perrin of St. Albans were married at the bride's home, June 30.



Dr. Charles C. Smith, a graduate of the University of Vermont, medical department, in 1865, and for many years a physician at Gaysville, died June 19, aged 76 years.

Dr. F. H. Dunbar, health officer of Swanton, who has been at the Mary Fletcher Hospital for several weeks, has recovered his health sufficiently to return to his home.

The State Board of Medical Examiners held examinations at Burlington, July 10-12. Thirty-three men took the regular examinations, 26 being graduates of the College of Medicine. Twenty-one physicians took the examinations to gain the reciprocity benefits.

Dr. John M. Allen, who has been taking a post-graduate course in New York, will remain in St. Johnsbury, devoting himself to diseases of the ear, eye, nose and throat and general surgery.

The alumni association of the University of Vermont College of Medicine held its annual meeting at the medical college, June 26, in connection with the commencement exercises. A goodly number were present, and following the business meeting a banquet was enjoyed. Dr. Charles P. Thayer of Boston was elected president for the ensuing year and Dr. Lyman Allen of Burlington, secretary and treasurer.

The annual meeting of the Rutland County Medical and Surgical Society was held July 10 at Lake View-in-the-Pines, Lake St. Catherine. Dr. Arthur W. Elting of Albany, N. Y., was a guest of honor. He gave an address on "Hyperemia in the Treatment of Acute Infections." Dr. S. W. Hammond gave the president's address. The following officers were elected: President, Dr. S. W. Hammond of Rutland; vice-president, Dr. E. R. Clark of Castleton; treasurer, Dr. J. H. Buffum of Wallingford; secretary, Dr. C. F. Ball of Rutland; censors, Dr. B. D. Colby of Sudbury, Dr. G. D. Parker of Fair Haven, Dr. H. L. Martyn of Cuttingsville; auditor, Dr. G. G. Marshall of Wallingford; delegates to the State Convention, Dr. W. W. Townsend and Dr. W. W. Bryant of Ludlow.

A class of 47 men was graduated from the College of Medicine this year. The honor men were H. W. Barber, J. J. Derven, I. N. Gates, G. H. Kirkpatrick and L. P. Sprague, Dr. Gates taking first prize and Dr. Barber second. The graduating class was composed as follows: Nathan Elmore Avery of Burlington, Harry Wilfrid Barber of Bombay, N. Y., Tonio John Bertagna of Proctor, Charles

Evans Buchanan of West Lebanon, N. H., John Dawson Carty of Rochester, N. H., Sherwin Aldrich Cootey of Rutland, Harry Leolyn Craft of Somerville, Mass., John Joseph Derven of West Rutland, Patrick Sebastian Duffy of Burlington, Robert Cushman Flagg of Newport, Ira Norman Gates of Blamford, N. S., Leon Benjamin Gordon of New Hampton, N. H., Hiram Herridon of Corinth, N. Y., Lyndhurst Prime Holcomb of Burlington, Warren Joel Howard of Bromley, N. Y., Fayette Elmore Hubbard of Burlington, Edward Dana Hubbard of Rutland, Roy Chase Jackson of Wiscasset, Me., William McKee Johnstone of Meriden, Conn., Howard Horace Johnson of Abercorn, P. Q., James Ambrose Jones of Burlington, George Holland Kirkpatrick of Stoneham, Mass., John Alexander MacFayden of Boston, Mass., Nshan Manooshian of Fitchburg, Mass., John Henry Miller of Newbury, Donald Miner of Jersey City, N. J., Sidney Mitchell, Jr., of Saranac, N. Y., James Frank Morris of New York, N. Y., Elwood Arthur Nichols of Nassau, N. Y., Francis William Norris of Swanton, John Irving Pinckney of Massina, N. Y., James Francis Quest of Troy, N. Y., Silas Arthur Reed of Moriah Centre, N. Y., John Henry Reichling of Schuylerville, N. Y., Leonard Blake Rowe of Troy, N. Y., George Clark Rublee of Morrisville, George Albert Russell of Monkton, Daniel Augustus Shea of Nashua, N. H., John David Smith of Jay, N. Y., Charles Augustus Smith of Central Bridge, N. Y., Leonard Pearson Sprague of East Randolph, Harry Warren Stetson of North Thetford, Carroll Wilder Still of Hardwick, Charles Edwin Stone of South Berwick, Me., Arthur Winford White of Portland, Me., Chester McLoon Wiggin of Rockland, Me., Harry George Williams of Manchester, N. H.

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#### MAINE.

Dr. A. F. Piper of Rockport died suddenly June 22. He was a staunch citizen, having taken an active interest in the affairs of the town for many years.

The Maine Medical Association held its annual session at Portland, June 18-20. Dr. Charles S. Minot of Boston gave the annual oration, his topic being: "The Relation of Embryology to Medical Progress." These

officers were chosen: President, Dr. C. E. Williams of Auburn; vice presidents, Charles D. Smith of Portland; O. C. G. Davis of Augusta. Censors, H. H. Brock of Portland; B. L. Bryant of Bangor; J. D. Cochrane of Saco; E. M. Wing of North Anson; W. L. Haskell of Lewiston. Committee on publication, Drs. Walter E. Tobie, secretary ex-officio; S. P. Warren of Portland, L. B. Hills of Westbrook, J. W. Beede of Auburn, L. T. Snipe of Bath. Business committee, Daniel Driscoll and Gilman Davis of Portland. Many interesting papers were read during the three days' session. The next annual meeting will be held in Lewiston.

The graduating exercises of the medical school of Maine were held June 27. The address to the class was delivered by the Rev. Raymond Calkins of Portland, his subject being "Manhood and Personality." President Hyde conferred diplomas upon the following members of the graduating class: Harris C. Barrows, A. B., Augusta; Arthur O. Davis, Bridgton; John L. Davis, Portland; Louis A. Derry, A. B., Portland; Frank L. Feren, Leviant; Stanwood E. Fisher, Portland; Leonard H. Ford, B. S., East Addington; Percy E. Gilbert, A. B., Waterville; Scott G. Larrabee, Scarboro; Homer E. Marks, Portland; Joseph R. Ridlon, A. B., Gorham; Walter J. Roberts, Kennebunk; Atherton O. Ross, Phillips; Harry W. Sampson, Monson; Alfred H. Shriver, Temple; Adam Shaw, Jr., Lowell, Mass., and Francis J. Welsh, A. B., Portland.

#### NEW HAMPSHIRE.

The summer meeting of the Grafton County Medical Society was held at Woodsville, June 15, and a complimentary banquet was tendered Dr. William Thayer Smith, dean of the Dartmouth Medical School.

Dr. Julia Wallace Russell, widow of Waldo P. Russell, died at Concord, July 1, after a short illness. She was 63 years of age. Dr. Russell was the prime mover in the New Hampshire Memorial Hospital for Women and Children, and in the last few years of her life gave much of her time to that institution.

The following men received the degree of doctor of medicine from the Dartmouth

Medical School this year: John W. Bowler, Hanover, N. H.; Hamlin P. Bennett, A. B., Farmington, N. H.; Edward A. Bullard, Cambridge, Mass.; Charles B. Chedel, A. B., Randolph, Vt.; Willis P. Craig, B. L., Marlow, N. H.; Irvin H. Farr, Holyoke, Mass.; George H. Foss, Pittsfield, N. H.; Park R. Hoyt, Lakeport, N. H.; Roy W. Mathes, Durham, N. H.; Carl C. McCarrison, North Berwick, Me.

#### NEW YORK.

Dr. C. W. Collins of Malone has been made an honorary member of the New York Genealogical and Biographical Society.

The Semi-Annual Meeting of the Franklin County Medical Society was held at Saranac Lake recently. Among the speakers were Dr. C. C. Tremblay of Saranac Lake and Dr. A. H. Allen of Trudeau.

Dr. L. M. Berry, a graduate of the medical department of the University of Vermont about 30 years ago, who practiced medicine in Franklin county for several years and later located at Chicopee Falls, Mass., has been obliged to go to Colorado on account of poor health and expects to remain in that state.

### AN EPITOME OF CURRENT MEDICAL LITERATURE.

#### MEDICINE.

##### CEREBRO-SPINAL MENINGITIS.

J. S. BILLINGS, JR., (*Journal A. M. A.*, June 2), gives a history of the epidemic of cerebro-spinal meningitis in New York City in 1904-05, with the methods employed to meet it. It began in the early part of 1904, and continued through 1905. During 1904 there was a total of 1,083 deaths and a death rate of 4.6; during 1905 1,511 deaths and a death rate of 6.3. Fifty-five per cent. of the cases were males and 45% females. The cases occurred mostly in children, only 19% being adults and only 1% over 50 years of age. Italians seemed particularly susceptible and negroes the least. The great majority of the patients were evidently of the poorer class, 76% residents of tenement houses and often living under insanitary conditions. In only 6% had there been any direct exposure to other cases of the disease and in only a small number was there evidence of direct transmission. In the majority the attack began without antecedents; only 6% were in bad health. The onset was sudden in all but 5%. Stiffness of the neck was the most common symptom and closely following it came vomiting, headache and convulsions. Eruption was present in 30% of the cases; it was



petechial in 19% and herpetic in 11%. Nasal discharge was noted in only 13 $\frac{1}{2}$ %. Of complications, those of the eye were most frequent, next came muscular paralyses, then otitis. In 33% of the cases, lumbar puncture was performed to confirm the diagnosis and the meningococcus was found in 82%. In the remainder the diagnosis was by clinical signs only. Death usually was due to coma and exhaustion. About 7% of the patients died on the first day, less than 34% during the first five days and 39% after ten days. Recovery was complete in 84% of the recoveries. Diphtheria antitoxin was employed in 313 cases, with a mortality of 69%. Large doses were no more effective than small ones. While its harmlessness was demonstrated, no credit is given it as a curative agent. In conclusion, Billings says that little light has been thrown on the mode of transmission of the disease, nor has any effectual treatment been discovered. It is to the laboratory that we must look for further light. One important fact brought out is that, in all probability, the disease is much the most infectious during the first two weeks. The Department of Health acted on this knowledge, enforcing quarantine, etc., during the first two weeks and insuring disinfection of rooms and bedding. As a possible consequence of this the number of deaths reported for the first six weeks of 1906 have been 102, as compared with 170 for the same period in 1905.

#### HYPERTROPHY OF THE BRAIN.

J. H. HABERLIN, Pawtucket, R. I. (*Journal A. M. A.*, June 30), reports the case of a child, aged 2, dying in convulsions, in which the apparently symmetrically enlarged brain weighed 1,712 grams (51 $\frac{1}{2}$  ounces). The membranes were not adherent, there was no flattening of the convolutions, no disproportionate increase in the size of the ventricles and the gray and white matters were developed proportionately. Clinically, the case could not be differentiated from hydrocephalus.

#### DIABETES.

DAVID L. EDSALL (*Medical Examiner*, May) reviews the physiology of glycolysis, explaining the latest knowledge of the breaking down in the circulation of the sugars which do not go through the glycogen stage as well as that which is derived from the glycogen stored in the liver through the successive stages of glycuronic acid, lactic and oxalic acid into its final stage of carbon dioxide and water. He calls attention as a point of practical interest to the fact that in the normal utilization of the sugars, some process occurs that prevents the flooding of the organism with acids that develop from the other foods, especially the fats; and that if this process is interfered with by the complete or almost complete exclusion of carbohydrates from the diet in diabetes or in others, the patient develops acid intoxication and may die of it. This is usually controlled, temporarily at least, by the use of large amounts of alkalies and by reintroducing carbohydrates into the diet. He reviews the various theories advanced to account for the breaking down of the sugars normally and the difficulty in diabetes, concluding that none of these theories are proven but that there is probably a grain of truth in all, but that no one alone is sufficient to account for all the facts.

JAMES TYSON, (*The Medical Examiner and Practitioner*, May, 1906), holds that the medical treatment of diabetes mellitus is disappointing since there are no

recent additions of any value to the drugs which have been more or less associated with the treatment of the disease. In the first place the only drug which the author knows is capable of reducing the quantity of glucose in the urine of a case of diabetes mellitus is opium. All preparations of opium have this effect. But the gum opium is probably the most efficient. Codeine, however, suggested by Pavy, has become the most popular preparation, chiefly because its use is unattended with the unpleasant effects which belong to the other preparations of opium, although it is both more expensive and less efficient. There is reason to believe that it is by quieting nervous irritability that opium acts favorably. It may be presumed, therefore, that any drug which has a similar tendency such as the bromides, belladonna, hyoscyamus, etc., might be useful. In point of fact that they are not; rarely the bromides may have a slight influence. Recent discoveries as to the relation of adrenalin to sugar formation have as yet led to no practical results. It will be remembered that studies upon this subject led to the belief that if a substance could be found which would promote the oxidation of sugar in the blood, it would be a cure for diabetes. Unfortunately none as yet has been found. Of the remaining drugs there is only one in which confidence may be placed—arsenic. The continuous use of small doses of Fowler's solution does favorably influence the course of a diabetes mellitus either as a tonic or as a promoter of oxidation. Other tonics are of course indicated; such as iron, strychnine and the simple bitters. Iron, unfortunately, too often tends to make the patient constipated and constipation is a very unfavorable complication of diabetes. There is no better determined fact than that diabetes complicated with obstinate constipation is a very unfavorable form.

#### TYPHOID IN CHILDREN.

HAND and GITTING (*Archives of Pediatrics*, June), give an analysis of 145 cases of typhoid in children. These children varied in age from one to twelve years, the largest number (22) being five years old. Fifty-seven per cent. were boys and 85% were white. The prodromal symptoms were as follows:

Diarrhoea, 55%.  
Abdominal pain, 53%.  
Drowsiness, 46%.  
Vomiting, 42%.  
Constipation, 35%.  
Nosebleed, 25%.  
Delirium, 16%.  
Chills, 10%.

Sore throat, pain in chest, nausea, vomiting of blood, convulsions in approximately 1% of cases.

Over three-fourths of the cases developed a temperature of 104 degrees or over. The shortest course which the fever ran was eight days, the longest was 46 days, the average duration of the febrile course in cases going on to recovery was 25 days, the uncomplicated cases giving an average of 21 days. The ordinary symptoms of typhoid fever were developed in the following order of frequency:

1. Widal reaction. This was positive in 95% of the cases. In 110 or 75% of the total number of cases the reaction had appeared on the tenth day. In 7 cases no positive reaction was obtained, but not much value is to be attached to this, when the attendant circumstances are considered. Thus, the test was negative on the seventh day, and before another test was made diphtheria developed, and the child was removed from the hospital; it was negative on the tenth day when the child was admitted, but death occurred three

days later and an autopsy made the diagnosis; in two other cases but one test each was made, on the eleventh and on the sixteenth days; in another case two tests were negative, on the ninth and thirteenth days; three tests were negative on the sixth, ninth, twentieth day in one case and on the eighth, sixteenth and twenty-first days in another.

2. Coating of the tongue was present in 129 patients, or 80%.

3. Spots were present in 87 patients, 70% of the white children.

4. Enlargement of the spleen was found by palpation in 95 patients, and in three there was great tenderness, giving 69%. It was not palpable at any time in 26 patients, and in 21 its condition was not recorded.

5. Abdominal tenderness or pain was noted in 54 patients, or 37%; and abdominal distension was found 40 times, or 20%.

6. Condition of the bowels. Thirty-three, or 22%, were constipated throughout the attack, and 78, or 53%, became so after a diarrhea of more or less severity; thus 57 had from one to four stools daily for a time and 21 had more than four stools daily, all becoming constipated later. Only 35, or 24%, did not become constipated, and of these, 3 had natural movements throughout the course of the disease, 12 had a maximum of 4 stools daily, 14 had a maximum of 8 and 6 had a maximum of 13.

7. Condition of the nervous system. Delirium was present in 26, or 18%; 13 were drowsy, 11 were irritable, 2 were restless, 2 had convulsions, and 1 each had stupor and delirium; delirium and external strabismus; stupor and retraction of head; rigidity of neck and limbs; retraction of head; apathy.

8. Condition of the lungs. Thirty-eight, or 26%, had bronchitis. 7 had bronchopneumonia, 6 had croupous pneumonia, and 1 pleuropneumonia.

9. Leukocytes. Blood-counts were made 121 times, 103 being in uncomplicated cases. In but 9 cases was there a leukopenia of less than 5,000 leukocytes per c. mm. Seventy-one gave counts of from 5,000 to 10,000, while 31 uncomplicated cases had from 10,000 to 16,000 leukocytes. Eighteen complicated cases were equally divided, half having a leukocytosis, of 11,000, 16,000 (3), 17,000 (3), 23,000 and 43,000; the other half ranging from 5,000 to 10,000. As a rule, however, the leukocyte-count furnishes valuable aid in the diagnosis, a normal count indicating typhoid fever, but a moderate leukocytosis not excluding it.

## SURGERY.

### GASTRIC CANCER AND ULCER.

GRAHAM (*Journal Minn. State Med. Assn.*, June) concludes an article on ulcer and cancer of the stomach and their relationship as follows; our clinical experience teaches us:

That the very great majority of ulcers of the stomach are located at the pyloric end. The immediate pylorus comes first, the lesser curvature second. A small per cent is found elsewhere, few at the cardia.

That the great percentage of cancers of the stomach are found at the pylorus and lesser curvature (pyloric end), that is, the same locations find the greatest number of each.

That quite a percentage (50-60) of patients suffering from carcinoma give three or more years of a pre-cancerous history.

That a growing percentage of cancer cases is found with short histories and ulcer demonstrated as the earlier lesion.

That there is a percentage, if small, of short ulcer histories leading to acute pyloric obstruction where the ulcer must have been present for quite a period, and latent.

That ulcers may be present for an indefinite period and no symptoms follow until obstruction, perforation, and hemorrhage appear, if the acidity is low or absent, and the ulcer locates itself along the lesser curvature or near the pylorus.

That cancers may develop under the same gastric conditions, and manifest themselves only when obstruction or systemic poisoning makes itself felt.

In conclusion, we would suggest that what is most needed to-day to settle these disputed points is better and earlier diagnoses in both ulcer and cancer of the stomach so that the non-medical cases may be reached by the surgeon at the time when promises for life are greatest and when the pathological condition is easiest to demonstrate. It is not surgical technic that we need so much; it is the actual bed-side diagnosis that is still far from ideal.

### REGENERATION OF LOST PARTS.

T. H. MORGAN, New York (*Journal A. M. A.*, May 5), reviews the facts and theories regarding the regeneration of lost parts in certain animals and the failure to do so in others. The question, he says, is possibly of some practical importance, for if we could determine why man does not replace a lost arm or leg, we might perhaps go further and discover how artificially to bring about this process. Regeneration appears to him as only a phase of the general phenomenon of growth, and if this is the case, why, he asks, does an animal that has ceased to grow begin to regenerate rapidly when a part has been removed? If we turn the question around the other way and ask, why does an animal stop growing at a certain stage, we may attack the problem at closer quarters. It is evidently not because the cells have lost the power of growth; their power in this direction seems unlimited, nor can it, as he shows, be entirely attributed to an equilibrium between food supply and consumption. The question seems to be one of inhibition, and he suggests, as a possible explanation of the cessation of growth, a definite response to a condition of mutual pressure or tension of the cells on each other. When this is reached growth stops, and when we alter the tension by removing a part it begins again. The facts of regeneration of lost parts in the vertebrates are given and the reason why it fails in mammals and in man are discussed. Morgan does not think this can be due to greater complication of structure or to any process of natural selection. He thinks it more probably due to the fact that different tissues have very different rates of regeneration. In the higher mammals the failure to regenerate is observed in cases in which cartilage begins to change to bone, and he thinks the main trouble is in the slowness of the bones to regenerate in time with the other tissues. He says: "If the tissues in man still possess the power to regenerate, may we not hope in time so to adjust their rate of regeneration that the replacement of a lost limb may be produced? I can not but think that some day this may be accomplished."

### APPENDICITIS.

KNOTT, Sioux City, discusses the management of appendicitis. (*Journal A. M. A.*, April 14). He is an advocate of immediate operation in all cases, save when the patients are already moribund or



in the small class in which the added shock of the anesthetic and of the operation itself would directly favor a fatal result. In clean cases, that is, those in which the infection is still confined to the appendix, there should be practically no mortality from the operation, and in cases in which pus has escaped and peritonitis has ensued it should still be small. During the years 1893-1895, inclusive, he has operated in over a thousand cases of appendicitis. Of these 650 were clean cases and 384 were pus cases; that is, the infection had escaped from the appendix and produced localized or diffused septic process. Of the former class only one patient died, or 0.6 of 1 per cent. Among the pus cases there were 30 deaths, or 8 per cent. He is opposed to operation except by skilled surgeons, and advises in all cases that an elevated position of the head and trunk, with the patient turned to the right side, so as to cause gravitation toward the lowest point, should be the first preoperative measure. Then an ice-bag can be applied to the part and all feeding discontinued. The use of the Fowler position and proper drainage, he claims, robbed appendicitis of its terrors.

#### CANCER IN THE UNITED STATES.

GUTHRIE McCONNELL, St. Louis (*Journal A. M. A.*, April 28), finds from an elaborate study of the statistics of the census of 1900 that while the death rate from consumption has very markedly decreased, that from pneumonia and cancer, especially the latter, has increased during the decade, the ratio of cancer increase being 12.1 per 100,000, and that this mortality is higher in the rural districts than in the cities. It is greater among foreign-born whites than among native whites, but the death rate from this cause is only apparently greater among the former here than in their native lands. Females are more subject to cancer than men, the respective percentages being 63.1 and 36.9. Persons employed in hard out-door labor seem more liable to the disease than those following sedentary occupations. Well-watered and timbered mountainous regions like the northwest coast, show the greatest mortality, and the figures do not support the view that cancer is more prevalent along rivers. No proof is afforded by the statistics of any direct connection between cancer mortality, a prevalence of German population, and beer drinking. Cancer mortality is highest after the sixty-fifth year of life, and after the forty-fourth year is greater among the unmarried of both sexes than the married. The general average at death from cancer is 58.1 years.

#### OBSTETRICS.

##### PUERPERAL FEVER.

ANNA S. WILNER (*N. Y. Med. Journal*, June 30), gives the causes of fever in child bed due to other causes than sepsis as psychical and physical. Any strong emotion, either grief, joy, fear, fright, annoyance, many visitors, etc., may act as a cause of the first order. Of the physical causes the writer mentions in order of frequency constipation, and consequent autointoxication, various disturbances of the mammary glands, retention of urine and intercurrent diseases. The detection of indican in the urine is of value in the determination of autointoxication from the intestinal tract. If found in large quantities it is an almost positive indication that the fever is of intestinal origin. Of all the enumerated causes of nonseptic fever, the most common are constipation, over feeding and strong emotion. The others are very rare. When these three causes can be excluded, we must as a rule,

look for some omission or commission with regard to asepsis. And if we will always, when attending a labor case, prepare our hands as carefully as for a surgical operation; if we always boil whatever instruments we have to use, and not be satisfied with merely dipping them in hot water; if we see that the patients external parts and skin around are thoroughly cleansed and pubic hair clipped; if we use no lubricant; if we touch nothing whatever with the examining finger, no matter how sterile, and separate the labia with the other hand; if we limit ourselves to as few internal examinations as possible; if we are not too precipitate in forcibly expelling the placenta; if, where we saw the patient before, we have forbidden coitus during the last month of pregnancy and if we make an effort to avoid contact with contagious diseases at least on the day of labor, or should such have been our misfortune, as it often happens with general practitioners, we take the trouble of changing our clothes and scrub still more and examine still less; if these and many other seemingly unimportant details will be remembered, we shall have less occasion to feel anxious about the temperature of our lying-in patients and less occasion to rake our brains as to what may be the cause of the fever.

#### DERMATOLOGY.

##### RINGWORM.

JACOB SOBEL (*Med. News*) in an article on ringworm gives the following treatment: Ringworm of the body responds far more quickly to therapeutic measures than scalp ringworm. Even so, the laity do not as a rule expect rapid cures in this condition, so that any means which will afford a speedy and ready disappearance of the disease will be welcomed. The method which I have adopted with gratifying results is the use of formalin. When properly diluted and carefully applied, one need fear no disagreeable effects. Two or three applications of the 40-per-cent. solution, diluted two or three times, has repeatedly in my hands cured the affection of the body. In a skin which is particularly sensitive it is wise to avoid vigorous rubbing. If the smarting or burning is intense the application of ammonia water, by its neutralization, will afford relief. A 1-per-cent. picric-acid solution in the form of Esbach's reagent, or Liquor Burrowii, is also valuable for the burning and smarting. If the ringworm is situated on the lids or in close proximity to the eye, this method is inadvisable; the formalin fumes are too apt to set up an acute conjunctivitis. I have never observed any serious dermatitis from the judicious use of this drug. A 5-per-cent. ointment of the ammoniated mercury or of chrysarobin, or the latter in colloidion or traumaticin will also effect a cure, and tincture of iodine and carbolic acid are favorite remedies with many. Ringworm of the scalp or tinea tonsurans is an affection more likely to escape detection than ringworm of the body, and one which on account of its persistency and obstinacy will test the patience and skill of the physician. Since it is highly contagious, isolation from others is clearly indicated. Nor is it probable that success will crown our efforts unless the hair of the scalp be cut very short; cut, not in the barber shop, to disseminate the disease, but at home or at the dispensary. This is a *sine qua non* for efficient treatment. Each child is to have its own toilet articles—brush, comb, towel, soap, etc.—and nightcap, and should sleep in a separate bed, if possible. Too frequent washings are to be avoided, but the scalp ought to be shampooed at least every other day. Epilation is to be practiced daily, a tedious and difficult procedure, but one of the few calculated to be effective. Formalin solution of 40-per-cent. diluted two or three

times, and applied with care, omitting the treatment occasionally if irritation is produced, will prove useful. Chrysarobin ointment of 5 per cent. is valuable if its action can be limited, that is, if it is applied only to the diseased areas. Its careless use on the scalp not only gives rise to a severe and diffuse dermatitis, but also to a disagreeable discoloration of the hair. The white precipitate ointment is devoid of these objections, and, while less potent, sometimes proves effective. Pyrogallie acid, turpentine, carbolic acid, anthrarobin, nitrate of silver, trikresol, and others have been tried with varying results. In recent years Jackson has lauded iodine crystals in good goose grease (15-25 per cent.) because of its excellent penetrating power.

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## PROFESSIONAL COMPENSATION: THE RIGHT AND ITS ENFORCEMENT.\*

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*By Hon. William W. Porter, of Philadelphia,  
Ex-Judge of the Superior Court of Pennsylvania.*

The topic discussed in this paper is not perhaps the most lofty for presentation by a member of one learned profession to the members of another. It was suggested by your president because of its practical interest. The material has been gathered hastily in the intervals of an active law practice. The attempt is made to present in a concentrated form the result of some of the judicial precedents in Pennsylvania affecting the right of the physician to compensation and the methods of enforcing such right.

Under the ancient English Common Law neither lawyers nor physicians were permitted to enforce payment for services rendered. If anything were paid it was received as honorarium or gratuity. In the early part of the nineteenth century the Courts of Pennsylvania followed this rule as to lawyers, but not as to physicians, who seem always in Pennsylvania to have had the right to charge for their services. Somewhat later the Supreme Court recognized in lawyers the right to maintain an action for fees, thus giving the members of the sister profession similar rights to compensation. The right is founded in contract, expressed or implied. The relation of the physician to his patient implies on the part of the former that he is competent; that he possesses the degree of skill ordinarily exercised by his profession, having due regard to the advanced state of the profession at the time, and that he will exercise this skill and treat his patient with reasonable care and diligence. There is no implication that he shall certainly cure. The

failure to effect a cure will not bar his right to recover a proper compensation if no actual want of skill be proved. In this connection it may be observed that the law presumes that a physician is competent in the absence of all evidence to the contrary.

When there is no express contract on the part of the physician, the law implies on the part of the patient an obligation to pay a reasonable sum for the services rendered. This implication is strong. When a claim is met by evidence that the physician agreed to render the services gratuitously, and such evidence falls short of an express contract so to do, the issue becomes a question of fact to be decided by a jury whether the evidence submitted is sufficient to overcome the implication of obligation raised by law. To determine what a reasonable compensation is, it is necessary to take into consideration the customary rate of charge in the locality (if there be such a customary rate), together with the extent of the ability of the patient to pay. As Judge Ashman, of the Philadelphia Orphans' Court, has said: "No flight of rhetoric can escape the plain fact that life has a pecuniary value of variable quantity, greater, for instance, in the case of a millionaire than in that of a day laborer. . . . The question . . . is one of values and the law which must govern it is a thing of common sense rather than sentiment." Judge Penrose, of the same court, has sustained the right of a physician to maintain a sliding scale of charges regulated by the pecuniary circumstances of each patient and to use his judgment in applying this scale to the particular case. To quote from Judge Penrose: "That a physician may adopt a minimum rate of charge for his professional services to the poor and a maximum rate regulated only by his mere volition or fancy in dealing with the rich, admits, of course, of no possible doubt either as an abstract question of personal liberty or as a matter of bookkeeping. And if the maximum should be in excess of the real value, the only consequence would be that patients who survive the first employment will probably, after receiving their bills, not repeat it."

In determining reasonableness of charge when claims for services are made against the estate of a decedent, the size of the estate may be considered by the court in conjunction with other circumstances.

The foregoing considerations have to do with implied contracts. Of course, a specific agreement between physician and patient to perform and receive certain treatment for a definite sum is binding upon the parties, irrespective of any question of reasonableness of the amount to be paid, and when a physician maintains a fixed rate of charge for certain kinds of services, and a

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\*This article, read before the Southern Branch of the Philadelphia County Medical Society, is so applicable to Vermont, that we publish it entire, as printed in the *Medical Council*.



patient employs him having knowledge of this rate, the employment amounts to an express agreement on the part of the parties to render and to pay in accordance with that rate in the absence of any agreement to the contrary.

In this connection it may be noted that a close family relationship subsisting between the physician and the patient is a fact to be considered with other circumstances, as tending to show that the services rendered by a physician are not purely professional, and in such connection but slight additional circumstances are required to rebut the implication of an obligation to pay on the part of the patient. Again, the fact that both physician and patient are of the same profession does not rebut the implied promise on the part of the latter to pay; but does render admissible evidence of the Code of Ethics of physicians in general and the custom of physicians in the locality as to their requiring payment for services rendered to a brother physician. Such evidence may be considered with other facts in the case showing an understanding between the parties that the services were to be rendered gratuitously. In this connection it is interesting to note that in a case in the Superior Court of Pennsylvania the Code of Ethics was attempted to be used as a piece of evidence to affect the right of one physician to charge for services rendered to another. Judge Orlady, of that court, holds that the code is not admissible in evidence without accompanying proof that both of the parties acknowledged themselves bound by it at the time the services were rendered.

Medical attendance and medicines are by the law regarded as necessities. Consequently, a physician may recover his compensation, by an action at law, for services rendered on Sunday, and it has been held that the mere fact that an operation might safely have been delayed until Monday will not deprive the surgeon of the right to recover his compensation because performed on Sunday. Also, inasmuch as such services are necessities, a man is obliged to pay for medical services rendered to his wife or family, and in the absence of evidence to the contrary, the law presumes the wife to possess the requisite authority from her husband to employ, on his behalf, a physician to treat herself or some other member of his family. This authority to the wife, however, may be revoked by the husband by notice to the physician before the services are rendered. No authority has been found which determines the right of a physician to recover in the case of the employment by a wife in a case of clear necessity, in opposition to notification from the husband. The right of the wife to charge the husband with liability for the cost of a surgical operation, does not extend to a case in which

there is no immediate need of such operation and when the husband could have been himself consulted. This ruling was had in a case in which the husband was not consulted; had no knowledge that the particular operation was to be performed, and was shown to have been opposed to an operation of the kind performed.

The authority of the wife to bind the husband arises out of the family relation and out of the obligation of a husband to furnish necessities. When no family relation exists no implied promise to pay for medical services rendered to another is raised by a request to furnish to a third party living in the home of the person making the request. This principle extends to the case of a father requesting the services of a physician for his adult son who resided with the father, the facts that the son was in business for himself and had means of his own being known to the physician when requested to attend the patient. Again, when a conductor of a trolley car engaged the services of a physician to treat the injuries of a passenger when there was no proof that there was any immediate need of treatment, the Court held that the conductor had no authority to bind the corporation of which he was a servant, and that the corporation was, therefore, not liable to pay the doctor for the services rendered to the passenger.

No little difficulty may arise when physicians are called to attend one person at the request of another, when the relationship is not definite and known to the physician. When a person living with another (whose relationship is not sufficiently close to raise an implication of a promise to pay) and the other orally promises to pay for all the services rendered both before and after the promise, the question arises whether the promise is to pay the debt of another or is an original obligation on the part of the promisor. An original promise to pay by one requesting the services is a direct obligation. A promise to pay, if the patient does not, or a promise to pay the debt of the patient already contracted, must be in writing, in order to hold the promisor to his promise if the amount involved exceeds the sum of \$20.

The liability of the patient to pay for the services of a consultant is quite clear. When an attendant physician feels the need of a consultant, and calls him in with the consent or acquiescence of the patient, the attendant physician acts as the agent of the patient who becomes liable to pay for the services rendered by the consultant. When, however, the patient is not in a position to be consulted by reason of his state of mind, or the seriousness of his condition making such a proceeding dangerous or inadvisable, and some other member of his family cannot be consulted

in his place, the law implies an authority in the attendant physician to act on behalf of the patient according to the physician's best judgment, and if under such circumstances he engages the services of a consulting physician, the patient or his estate becomes liable to pay a reasonable sum for the services of the consultant.

Under the judicial interpretation placed upon the term "physic" in an early statute, a physician's bill for professional services rendered to a decedent in his lifetime, and to the members of his family for a period of six years previous to decedent's death, was made a claim, payable out of the estate before general creditors. By a statute (approved February 24, 1834) a physician's preferred claim for medical attendance was limited to such as represented the value of the services rendered to the decedent during his "last illness." Just what constitutes a "last illness" has been variously determined by the lower courts; but the Supreme Court has said that the phrase means such illness as is the proximate, not the remote cause of the decedent's death. In the case referred to, in which the decedent partially recovered from an injury and soon after became worse and died, the Court held that the claim of the physician who treated the decedent immediately after the injury up to the time of the partial recovery was not a preferred claim. Serious difficulty arises in defining "last illness" in cases in which the decedent dies of some lingering though fatal disease. In such cases the disease must be one which continuously disables and in which mortal symptoms become manifest. Furthermore, services rendered during a last illness must have been rendered within a "reasonable time preceding the death." This expression is elastic and results in various conclusions. No definite rule can be stated. For example, the claim of a physician for services rendered a decedent during the period beginning with the initial stages of softening of the brain until his death was narrowed to a brief period immediately preceding death after the disease had assumed a fatal form. Again, a claim of a physician who had treated a tuberculous patient for five months preceding his entry into a hospital, where he died five months afterward, was held to be entitled to preference because there had been no improvement in the patient's condition. Again, when there had been no improvement it was held that a claim for three months' services rendered a tuberculous patient, when a month intervened before another physician treated him until his death three months later, was entitled to preference, the time being held to be reasonable and the interval immaterial.

No difficulty in proving a physician's claim for services ordinarily arises when a patient is alive

when the suit is tried. Both parties are competent witnesses under such circumstances. A physician may testify to the extent and value of the services he has rendered, using to refresh his memory any memoranda he may have made at the time. When, however, the claim is against the estate of a decedent, the conditions are changed. When one of the parties is dead, the other will not be permitted to testify.

#### PHYSICIAN'S ACCOUNT BOOK.

It is usually difficult to secure any testimony as to the services other than that of the physician himself. It thus becomes important for him to have some written evidence in proof of his claim for compensation. The admissibility of a physician's book account of original entries as evidence against a decedent's estate has not been passed upon explicitly by the Supreme Court. The Superior Court has, however, held that a physician's book of original entry is admissible. The latter decision is in accord with the practice in such of the lower courts as the question has arisen and been decided. Certain things are necessary to make a physician's book account admissible as evidence: 1. The book must be regularly kept up and a usual book in which to keep accounts. The entries must be made in the regular way and at the time the services are rendered. What is sometimes called a physician's "visiting list" is not such a book and is not admissible in proof of services rendered. But it has been held that entries made by a physician's clerk from memoranda are admissible in evidence. 2. The charges must be specified, itemized and not lumped. When services are rendered, different from such as are incident to a regular visit and for which a specific charge is made, the full nature of the services should be set out. When an operation is performed, it should be entered in the book, not in general terms, but with some particularity. On the other hand, a charge for medicine has been held sufficient without specifying its character and quantity. 3. The entries must be self-sustaining, that is, sufficiently clear to be understood without the use of a glossary (without unintelligible abbreviations or hieroglyphics), and full enough to disclose the nature of the entries without resort to oral testimony by way of explanation. 4. The value of the services must be set forth and the charges entered opposite each of the items. This charge is not conclusive, but is *prima facie* proof of the value. 5. The character of the entries must be such as to disclose an intent to charge, as distinguished from a casual memorandum. These requisites to the book are essential. No attempt is here made to indicate how the books shall be kept or to suggest a form. With the rules just suggest-



ed before him, a physician following his own thought and inclination can, it is believed, produce a book which will be of great assistance in proving a claim against the estate of a decedent.

In conclusion, I desire to say that the foregoing does not purport to be more than a statement of the law contained in a few of the decisions, and it will always give me pleasure to extend to any member of the body which I now address, and, indeed, to any member of the medical profession, such assistance as I am able, if circumstances should arise which would make the opinion of a member of the legal profession desirable.

In submitting the foregoing I have been discussing that which is of serious importance to the members of the profession, but I am conscious that it is to the lower side of the professional life that I have addressed myself. I cannot read the Code of Medical Ethics under which you are all practicing without being taken into the upper levels of professional life. To all of us the primary importance is not in the getting, but in the doing. No man true to his profession draws his inspiration from its pecuniary rewards. That comes from the consciousness of duty well done in the alleviation, if in ever so small a degree, of human misfortune.

1327 Land Title Building.

## EFFECT OF TOBACCO ON THE HEART.

The active principle of tobacco is nicotine, which has a very powerful influence upon the blood pressure and cardiac action. Both in frogs and mammals nicotine produces, first, convulsions and then paralysis. When applied in small doses to the frog's heart it causes the beat at first to become slow and afterwards to become quick. If the dose be large, no primary slowing may be observed. In mammals it causes a slowing of the heart with enormous rise of blood pressure. The rise of blood pressure is so great that I have never seen it equaled after the injection of any drug, with the exception of suprarenal extract. The rise of pressure is chiefly due to contraction of the arterioles. This contraction is partly dependent upon stimulation of the vasomotor center in the medulla oblongata, but partly also to a local action upon the arterioles themselves, as it is produced by injection of the drug even after the medulla has been destroyed. The pulse rate in mammals is first slowed and afterwards quickened, just as in the frog. The slowing is due partly to stimulation of the inhibitory ganglia in the heart itself. The subsequent increase in the pulse rate is due to paralysis of these ganglia. In consequence of this double action of nicotine when the vagus

is divided during the period of slow pulse, the pulse becomes somewhat quicker, but still remains slower than normal. When, however, the dose has been sufficiently large to quicken the pulse, no stimulation of the vagus will slow the heart, as the inhibitory ganglia in the heart, through which the vagus acts, are paralyzed by the nicotine. The action is the same in the heart of the frog, so that, after a large dose of nicotine, stimulation of the vagus has no effect upon the heart, but stimulation of the venous sinus itself will slow the heart. The reason of this is that, although the inhibitory ganglia in the heart are paralyzed, the inhibitory neurons, which proceed from them, are still intact and are affected by local stimulation.

Formerly, tobacco enemata were used as a means of causing vascular and general relaxation, but they were far from being without danger and are never employed now. But although tobacco is not used as a remedy for disease, its employment is so universal that its action requires very careful consideration. Nicotine alone is taken into the body only when tobacco is used by chewing or by snuffing. When it is chewed most of the juice is expectorated, but a small portion is probably swallowed. The tobacco used for chewing or snuffing contains as a rule but very little nicotine, and so symptoms of poisoning from either of those habits are rare. Usually, however, tobacco is employed for smoking either in the form of cigars or in a pipe. When used in any one of these forms it is not pure nicotine which reaches the mouth, but really the products of the dry distillation of tobacco, containing a large quantity of pyridin and picolin bases. Probably nicotine in greater or less quantity may be present. The proportions of the pyridin and picolin bases in the smoke vary according to the mode in which tobacco is burnt. In a cigar there is freer access of air, so that much collidin and little pyridin are formed, while in a pipe much more pyridin is produced, and thus stronger tobacco can be smoked in a cigar than in a pipe. So much is this the case that tobacco which in the form of a cigar would produce no disagreeable effect, may cause giddiness and vomiting if smoked in a pipe. The smoke from a pipe or cigar usually passes simply into the mouth and out again either through the mouth or the nostrils, but when smoked in a huqua or narghileh the smoke is inhaled into the lungs, and this is frequently done also by people who smoke cigarettes. When a huqua or a narghileh is used the smoke passes through water before being inhaled, and it is thus deprived of most of its poisonous constituents; but this is not so with the smoke of cigarettes, and, as absorption occurs very rapidly from the pulmonary mucous

membrane, cigarette smoking is sometimes very injurious. There is another reason, however, why cigarette smoking is frequently more harmful than smoking a pipe or cigar, and it is that cigarettes are small and can be smoked in a few minutes, so that many more are consumed in the course of a day than would correspond to pipes or cigars, and the total quantity of tobacco used is thus greater in the form of cigarettes.

Smoking in moderation does not seem to be injurious to grown-up people, but there appears to be a general consensus of opinion that it is very distinctly harmful to growing lads. In adults smoking appears to have a double action. It will stimulate the brain to increased activity, and it will also produce a soothing effect in conditions of excitement. Its stimulating effect upon mental activity is probably partly due to the local irritant action of smoke upon the mouth, causing reflex dilation of the vessels which supply the brain. Its action as a sedative is probably partly due to the necessity of breathing rhythmically while smoking, and to the soothing effect of watching the smoke as it issues from the lips or nostrils, especially when it is blown out in the form of rings. This is by no means an unimportant factor, for many people derive but little pleasure from smoking in the dark.

One of the commonest results of excessive smoking is chronic pharyngitis, with irritability of the throat, cough, and hoarseness, and sometimes the irritation also affects the tongue. Weakness of vision, nervous tremor and giddiness are frequently the result of tobacco smoking. It is difficult to decide how far these are due to the direct action of the tobacco smoke upon the nervous system, and how far they are caused through alteration in the circulation. The circulation becomes much affected, palpitation and pain in the cardiac region are common results. Sometimes, though rarely, the cardiac pain may be so great as to stimulate angina pectoris. Irregularity of the heart is very common, and it appears to me that this irregularity is more frequently found in a common kind of tobacco known as "pigtail" than from better class tobaccos.—Sir Lauder Brunton in *The Medical Examiner*.

### INFECTIOUSNESS OF CEREBRO-SPINAL MENINGITIS.

The epoch-making work of Weichselbaum in 1887, when he found the microorganismal cause of spotted fever, supplied a basis upon which to work out the complete etiology and transmission of the disease. Since this author's publication many others have corroborated his findings but no one has added the link of the transmission to the chain of the etiology.

Recent investigations have proven that the diplococcus intracellularis meningitidis may be found in the nasal and pharyngeal cavities of a very large percentage (50) of patients suffering with this disease, during the first two weeks, in 10% of those attendant upon such cases, and in a few healthy persons who have not been in contact in any way with patients suffering from cerebro-spinal meningitis.

These facts show conclusively that the bacteria are present in the air, but they do not show how they may gain entrance to the body in some instances and affect the meninges. Whether the organisms penetrate to the meninges directly through the cribriform plate of the ethmoid bone or by a lymphogenous or hematogenous route has not yet been proven. The blood is known to contain them in the early stage of the disease.

In considering the nose and throat contagion of this disease, a comparison with epidemics of streptococcal sore throat might be permitted, in which the infection has been observed to begin mildly, progress to a maximum severity and then decline in virulence. This may depend upon the fact that the microorganism becomes more and more virulent as it passes from throat to throat, finding such a medium favorable to its growth, until it meets a mucous membrane which is resistant, thereby hindering its development, so that when it arrives on another throat it is unable to excite as great a reaction, which inability becomes greater on its next passage. Indeed such a curve of activity and virulence has been observed. It is much easier to trace this curve with an organism like the streptococcus which is cultured with more ease than the meningococcus, the latter requiring experience and great care in the technique. Indeed, the pathogenicity of the diplococcus intracellularis in laboratory animals is so variable and uncertain that it is of no value in this respect. But everyone knows how an epidemic progresses gradually to its height, remains there for a time and then recedes. Is it not possible that the direct transmission of bacteria through the air may give it opportunity to enhance its virulence by frequent transplantation on favorable soil until it meets an unfavorable or inimical medium, perhaps a few consecutive times, by which its infectiousness is much decreased?

Whatever the method of transmission or infection, the presence of this coccus, now conceded to be the microorganismal cause of the disease, in the nares and throats of the sick and the well, indicates most strongly that a strict antiseptic treatment of these cavities should be maintained, at least during the attack, both of the patient and of those coming in contact with him in any way.—*Charlotte Med. Journal*.



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## ORIGINAL ARTICLES.

### THE MEDICAL CURRICULUM.

*By Henry Crain Tinkham, M. D., Professor of Anatomy and Clinical Surgery, and Dean of the University of Vermont College of Medicine, Burlington, Vt.*

During the past fifteen years especially, there has been a greater effort on the part of those interested in medical education to raise the standard of requirement for graduation in medicine, and also the standard of preliminary education.

Fifteen years ago medical colleges had no common standard of education, each college fixing its own. This standard was made high or low according as those having the matter in charge were influenced, either by a desire to bring about the best results possible in an educational way, or by a spirit of commercialism, which sought to meet competition and attract students by easy requirements. Another thing which has exerted a great influence on medical teaching and necessitated radical changes in the medical college curriculum, is the wonderful advance that has been made in every department of medicine and surgery. Many of the methods of investigating disease which are taught in the medical schools to-day were not known ten years ago.

It is within the memory of many when laboratory teaching did not form any part of the curriculum even of the best medical schools, but to-day it is considered of the most vital importance. As a result of these radical changes in the accepted ideas of disease and the methods employed in making diagnoses, the medical curriculum has had to be changed in nearly every way. Medical colleges accepted these new ideas with a widely varying degree of promptness, so that the curricula of American medical colleges became more unlike, both in regard to the manner of teaching and the time required.

The question of unifying the standard of medical teaching has been given a great deal

of careful thought, and very much has been accomplished towards bringing about a common standard of requirement for graduation. The Council on Medical Education of the American Medical Association and the Association of American Medical Colleges have been working independently on this subject and have reached practically the same result; both have recommended a curriculum, having, as a minimum requirement, a course of four sessions of thirty weeks each, with thirty hours of teaching each week, or, three thousand six hundred hours of teaching during four years.

All efforts to bring about a common standard of minimum requirement have been made along the line of a fixed number of hours of teaching. It may be that time is the only common standard that can be applied to the curriculum of our medical schools, but, as the efficiency of any teaching must depend very largely upon the character of the instruction given, any arbitrary regulation requiring a certain amount of time to be spent in teaching and which does not consider educational attainment, if acquired in less than the prescribed time, is, at least, open to criticism. The time will come when a standard of professional attainment must be recognized regardless of how, or when, or where it was obtained.

In discussing any curriculum for the teaching of medicine there are two questions that seem sufficiently broad to cover the entire subject in a general way.

First: What standard of medical education will best meet the needs of the majority of the people?

Second: What amount of mental work can be done satisfactorily, in a given time, by the average student?

A standard of medical education, which is so low that the people are obliged to be cared for by physicians who have not been trained in the best methods of diagnosis and treatment, is not to be considered.

A standard of medical education so high that the cost, in time and money of acquiring it, would practically prohibit the physician from locating in the small rural towns, would certainly work great hardship to a vast number of people. Hence, the idea of the medical curriculum should be to set such a standard of medical education as shall qualify medical grad-

uates to accomplish the greatest good to the greatest number.

The medical graduate should be thoroughly conversant with all the approved and practical methods of recognizing disease, he should know the most improved treatment, and he should have had thorough training in all subjects of medicine which lead up to diagnosis and treatment.

It is necessary that he should be so trained that he will know when to employ these methods for diagnosis; it is not necessary that he be made sufficiently expert to carry out many of them. He can serve the patients much better by having this part of the work done by laboratory experts, for it is impossible for a general practitioner to keep sufficiently familiar with the technique of laboratory work so that the result of his work can be depended upon. Most of this work must be done by specialists to obtain reliable results.

The number of hours a day a student can do satisfactory work in class room or laboratory, must depend somewhat upon the amount of work that is required to be done outside in preparation. If the plan of teaching assumes that all instruction should be in laboratory, class-room, or clinic, and that the student should do little, if any, study or reading outside of the hours assigned for this work, then eight or even ten hours a day might be possible.

If the plan of teaching is such that the student has to spend as much time in study and general reading in preparation for the exercises at college as in those exercises themselves, then it is apparent that the curriculum should call for a less number of hours.

In view of the fact that medical literature contains the results of the investigations of the world, and that the student of medicine should be able to read intelligently by himself, a curriculum which provides a smaller number of hours of work in college, supplemented by study outside, seems the most advisable.

Thirty hours of college work a week as recommended by the Association of American Medical Colleges, if supplemented by a corresponding amount of study outside, in way of preparation, is the maximum amount of work a student can do well.

This curriculum of thirty hours' teaching each week, for thirty weeks, gives ample time for teaching all that is essential for a student to know to be thoroughly qualified to practice medicine in a satisfactory way.

The raising of the standard of preliminary education beyond the grade of a first-class high school, (which should correspond to entrance requirements of literary institutions that admit

students by certificate) or increasing the medical curriculum beyond that suggested by the Association of American Medical Colleges, would be putting a burden on the medical student without a reasonable assurance of increasing his usefulness as a medical graduate.

In brief then, we believe that the curriculum recommended by the Association of American Medical Colleges is entirely satisfactory, and is sufficiently ample to meet the needs of the general medical education. The purpose of the medical college curriculum should be to produce well qualified, general practitioners, not specialists.

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### THE DIAGNOSIS OF CHRONIC INTERSTITIAL NEPHRITIS.

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*By S. W. Hammond, M. D., of Rutland, Vt.*

"Out of sight out of mind," is an old adage which this society did not adhere to when it elected me to preside over its meetings for the ensuing year. This occurred upon the 11th day of July, 1905, the day of my arrival at Portland, Oregon, to attend the annual meeting of the American Medical Association, and to serve our State society as best I might in the house of delegates of that august body. It could not, under such circumstances, be other than a source of genuine satisfaction to learn, upon returning, that your choice of president had fallen to me.

It is with pride that I call your attention to the prosperous condition of our society. Ever since my membership, which covers a period of ten years, the attendance has been large. We undoubtedly have had the largest percentage of attendance of any county society in the State. The papers have been of a high order, showing originality of thought, and many times have been based upon original experiment and investigation. Finally this society has always evidenced its prosperity by the never-failing sign of solvency at the end of the business year.

I cannot refrain at this point from giving my colleague, and your worthy secretary, Dr. C. F. Ball, due credit for such success as we have had during the past year, by arranging attractive programs for our meetings.

The special medical subject which I have chosen to present to you to-day is "The Diagnosis of Chronic Interstitial Nephritis." I know of no disease, to which human flesh is susceptible, that has such insidious ways in

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\*President's Annual Address before the Rutland County Medical Society, July 10, 1906.



manifesting itself as chronic interstitial nephritis. This disease, in this climate at least, is increasing. It attacks both men and women, oftenest, probably, at the height of their physical and mental powers; at least the majority of our patients suffering from this affection who consult us are from this class.

Although this disease is an incurable one, yet when once recognized, and the patient places himself in medical hands for treatment and is ready to yield to the demands of all the details of treatment,—many years can undoubtedly be added to such a life—years of comparative comfort, happiness and freedom from any apparent disease. No excuse, then, need be offered for bringing up so time-worn a subject, if the writer can even give you a single suggestion, or but refresh your minds on the diagnosis of a disease of such importance.

I shall lay particular stress upon those symptoms which appear early in the disease almost to the exclusion of those so prominent when the affection is well advanced and when no difficulty whatever is encountered in making a diagnosis.

Ten years ago the late Dr. J. H. Linsley issued a monograph, the gist of which was the importance of microscopic examination of urine for tube casts in suspected cases of cirrhotic kidney where albumin was constantly absent. In this paper he based the most of his study upon himself and the disease from which he subsequently died. To-day I wish to emphasize the importance of watchfulness where both albumin and tube casts are absent, or so infrequently present to be of no use to the general practitioner in his diagnosis.

A case in point is that of Mr. C., a plumber, aged 43, who came to me in the early days of my practice, first for dyspeptic symptoms, from which he recovered. Later he consulted me with reference to a prickling sensation of his entire skin, which passed away. About one year later he came to me for a peculiar feeling in the head, which also passed away. From the first this patient evidenced such high arterial tension without sclerosis that I examined the urine both chemically and microscopically, but was thrown off my guard by the absence of both albumin and casts, and considered the man as having a very strong heart action produced by moderate hypertrophy. I passed this man for life insurance, which, luckily for my reputation, he lapsed to take more in other companies, passing no less than three other physicians for insurance after first consulting me. He died of nephritis in 1904, in his 48th year, and six years after his first visit to me for the gastric symptoms.

Another case, a Mrs. P., aged 25, now under treatment, first called me for an attack of dizziness and fainting while at her dressmaker's. She had evidently started in with an acute exacerbation of her disease, as the urine presented the typical qualities of chronic interstitial nephritis. Upon close questioning I am able to elicit symptoms pointing to cirrhotic kidney of some four or five years' standing, such as some visual disturbance, periods of indigestion, and one attack of anemia.

Under treatment the albumin and casts have both disappeared, so that with the closest search of 24 hour specimens I have for weeks been unable to discover either. This patient has no rise of arterial tension or cardiac hypertrophy, but now has a moderate anemia, a fickle appetite, and poor digestion, with considerable visual disturbance, like black specks floating before the eyes. She also states that an oculist told her three years ago that her eyes showed signs of kidney disease, but that she never gave it a serious thought or consulted a physician with reference to it. This patient has unquestionably contracted kidney,—the acute attack undoubtedly being brought on by the increased hyperaemia of the genito-urinary tract incident to her recent marriage.

Too often I think we are inclined to associate sclerotic kidney with arterio-sclerosis and with people past the meridian of life. The main object of this paper is to give any aid I may in making as early a diagnosis as possible, especially in those from 25 to 50 years of age, who are attacked by this disease and who should be given as many years of usefulness as possible.

What are the symptoms, the vague symptoms of sclerotic kidney for which we are usually first consulted, and which, by reason of the trouble being referred to some remote organ or organs, mislead us, if indeed we at all suspect a kidney lesion?

If you be an ophthalmologist and are consulted for some visual disturbance, you may be the first to discover an albuminuric retinitis, and that your patient has commencing kidney sclerosis. Indeed, this sign is demonstrable earlier in contracted kidney than in any other form of nephritis, and oftentimes long before the urine exhibits the characteristic qualities of the affection.

If an aurist, you may be consulted for tinnitus aurium or vertigo, or some form of deafness, which should place you on your guard as to the real location of the trouble. Very rarely indeed will you be consulted as general practitioners for any symptom referable to the urinary tract unless it be for an apparent blad-

der irritability and the patient expresses himself as having an unusually free flow of urine.

The urinary examination may not yield a single sign pointing to chronic interstitial nephritis. Absence of albumin and casts, as exemplified in the cases cited, as well as the presence of a normal quantity of urea, not a great increase in the amount of urine, without a sufficient lowering of specific gravity to excite suspicion,—all combines to make it impossible to make a diagnosis of cirrhotic kidney until later, when any one or all of these signs may one by one appear.

Instead of a urinary trouble your patient is more likely to come to you to be relieved of his indigestion, which is a fairly early symptom in contracted kidney. It may be or not accompanied by nausea, vomiting and diarrhoea. You may be called to find a patient with cerebral hemorrhage, and upon examination of the urine from the catheterized bladder, ample evidence of chronic interstitial nephritis is found when the patient had appeared to be in perfect health up to his shock. Instead of a gastric disturbance your patient may come to you for some respiratory disorder, as bronchitis, attacks of asthma with oppressed breathing at times. He may come for symptoms entirely referable to the skin, as an eczema, an intolerable itching or burning sensation. He may come to you for a persistent, but usually periodic headache,—headaches which are usually described as coming on upon first rising in the morning and wearing away with the day. Your patient may have appeared for relief from cardiac palpitation.

It is generally agreed that one of the most constant early symptoms of chronic interstitial nephritis is raised arterial tension, although this sign may be absent, as in the case of Mrs. P., now under treatment for this disease. As might be expected in cases of raised arterial tension, the heart commences to hypertrophy, and with the advance of the disease will the apex beat of the heart be carried downward and outward toward the axillary line.

With the entire absence of evidence in the urinary findings to point to chronic interstitial nephritis, and with the presence of a persistent increase of blood pressure, accompanied by one or more of the special symptoms referable to the skin, nervous system, digestive tract or respiratory apparatus heretofore mentioned, I believe, after excluding the possibility of this train of symptoms as coming from another source, that we are justified in treating the case as one of contracted kidney. This disease is not inconsistent with a great amount of mental and physical activity, and those attacked often-

times dispatch a tremendous amount of work for years; hence the importance of an early diagnosis, that our patients may have the proper guidance as to treatment in order to prolong such activity to the remotest possible time.

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### RECENT PHASES IN CONNECTION WITH THE VERMONT OBSERVATION LAW FOR INSANE CRIMINALS.

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*By Walter D. Berry, M. D., Physician to Lakeview Sanatorium, Burlington, Vermont, formerly Professor of mental Diseases, University of Vermont.*

Since the publication of the author's article entitled "Medico-legal Phases of the Vermont Observation Law for Criminal Insane," appearing in the American Journal of Insanity, there have now been a sufficient number of commitments under this act to test still further the relative efficiency of the present system as compared with the former methods. In treating of the subject previously, the conclusions drawn were more or less immature because of being based upon an insufficient number of cases, whereas now, the number has been nearly trebled, which, with a greater variety of admissions, necessitates a broader view of the practical working of the law.

The following complete summaries of observation cases will perhaps suffice to show the manner in which these are being worked up before rendering the diagnosis to the court. The following are diagnoses which, in a more brief way, may give some idea of the variety of cases admitted:

**Case No. 1.**—Morphinism with attendant physical breakdown but unattended by any well marked morbid physical phenomena; a moral degeneracy may have followed from the drug habit, as the usual history of the chronic use of morphine demonstrates a failure of the high ethical sentiments; however this would be but an inference for us to say—returned to court after seven months' observation and sentenced to two and one-half years in House of Correction.

**Case No. 2.**—Indictment, "Murder;" diagnosis, praesensile paranoia on ground of age, gradual onset with absurd delusions of persecution and poisoning; misinterpretation of personality with psychic negativism; clear consciousness; orientation unimpaired; good memory; emotionally depressed and serious; at times cheerful and amiable; at other times senseless, evasive, sus-



picious, mute; with some muscular passivity; at present more normal and agreeable; physically exhibits insomnia, thickening of radial and temporal arteries with considerable pain in head.

**Case No. 3.**—Patient is a male aged 25, single, native of Vermont, farm laborer, education common school, is a good workman and steady for the most part, given to indulge in intoxicants occasionally when with convivial companions, inclined to be ugly at those times, described as giving away to anger and leaving place of employment for days at a time. No phenomena of insanity revealed in history. Arrested on charge of attempted or threatened homicide and placed here for observation May 5, 1904. Here was given expression to no irritative symptoms of mental aberration and tests of mental capacity revealed a standard only moderately below the average of those having similar advantages. Denies any memory of events, which immediately lead to his arrest, saying he came by his information when it was brought out at the hearing. He had drank about one dollar and a half worth of beer that day, in addition to several drinks of 50 per cent. alcohol. Said he first realized his state when he woke up in jail about midnight. Attitude here has been perfectly respectful and expressive of good nature. Physically, high narrow palate and slight pulmonic hyperresonance are the only stigmata present. Diagnosis, not insane but of a mental standard moderately below the average.

**Case No. 4.**—Patient is a male aged 21, native of Vermont, single, common school education, no occupation. Maternal granduncle attempted suicide, maternal grandfather a hard drinker, father industrious. Patient has been permitted to smoke since a year and a half of age. Evincing usual aptitude at school but has shown little inclination to work and gain a livelihood. He has always been light fingered, and has been arrested several times for theft. Claimed that he attempted suicide shortly before admission here and shot himself in the right shoulder. Arrested for stealing twenty dollars from aunt and committed here for observation April 14, 1904. Repeated examination here and has failed to reveal any unbalanced state of the mental faculties. No attempt has been made to simulate insanity. Diagnosis: Not insane, based on reasons given above.

**Case No. 5.**—Patient is a man age 35, native of Canada, married, occupation tanner given, but has no special steady work. Has a sister insane, and a brother who drinks to excess. Has no education, can neither read nor write. When

a youth, aged about twelve, was thrown by another boy and struck his back on a stone, soon after Pott's disease developed. Since marriage could only assist by odd jobs, such as berry picking and cleaning school houses, etc., toward the support of his family, however, he has been steady and saving, working hard so far as he was able, according to brother's report, to do his share of the bread winning. Wife claims he has always been subject to fits of violent anger, which of late have become more frequent and more intense. "During past year he has threatened us several times—he threatened to make way with us (family), has said if he had a gun he would shoot us, he has always been awfully nervous, during past year has been more and more nervous at night, he would suddenly jump up out of bed, grab edge of bed and let it drop, would have spells of raving during the night in which he would indulge in all sorts of talk, chiefly of threatening character, spells would last about an hour usually and he would quiet down apparently as if he had forgotten all about his previous violence." A short time prior to commitment to hospital he is alleged to have made an attempt on his wife's life. "He was hoeing out in the garden and I told him not to cut down some sweet corn I had there but to wait if he did not want to hoe and I would do it, whereon he immediately proceeded to cut down all the corn." That same day at dinner without warning he suddenly tore sleeve of his shirt and then made a lunge at his wife with case knife which she avoided and ran into another room, he dropped knife and went out of doors making no attempt to follow her. About a month previous to commitment he choked his wife without warning. No hallucinations elicited, no loss of memory, no delusions "except when raving" (could express no special delusion). Habits have been good, never using tobacco or liquor, has been troubled for several years with "stomach and heart," never would take any medicine, appetite always good. Brother reports him as being excited and had one night while at his house so much so that they did not go to bed. He attempted no violence but talked considerably. Nothing definite reported as to what he said. Admitted here July 14, 1903, as observation case.

Here has given no evidence of hallucination, consciousness perfectly clear, he recognizes his surroundings and the proper relations of objects and events in environment, oriented perfectly, memory good for both recent and remote events, attention not distractible abnormally, thought well connected and relevant, judgment and

reason of limited range, owing to restricted mental endowment and want of education. No delusions have been expressed in hearing of doctors. Emotions have been well under control, however he shed tears on several occasions when speaking of wife and home. Conduct has been rational without exhibition of irritability or temper at any time. He has been wont however to run to the doctor with many trivial requests, chiefly about his health, of which he complained much at first. He was troubled considerably by stomach dyspepsia or "gas on the stomach," of late has little to say about it, expressing himself as feeling much better. He denies having made any attempt on his wife's life. "My wife throwed food to the boy, it startled me and I jumped up, dropped my knife and fork, and walked out on the veranda. I have got up in the night a number of times and walked about because my stomach would fill up with gas." Also denied that he threatened or laid hands on wife, but said he had sworn at her a few times. "I have been nervous for over a year. I had my head hurt twelve or thirteen years ago. I am telling you the straight truth." He showed a printed letter without signature asking him to sign the deed for the sale of his home, threatening to lie about him if he did not, saying, "You know I have lied about you before." Later patient denied all connection between wife and note, saying it came from Morrisville, but would not attempt to tell from whom. He cut down corn during a fit of irritation. Individuals of his mental caliber are prone to attacks of anger on slight provocation, lacking the inhibition essential to a high moral sense.

Physically: July 23rd. Head of Doliocephalic type, forehead narrow, marked hyposes and scolioses, convexity of dorsal region points toward left side, marked shortening and telescoping of lumbar region, so much so that floating ribs can be felt at bottom of deep lateral sulci, right iliac crest prominent, chest asymmetrical, bulging considerably over lower portion, anteriorly; left side is the broader, prepucce long. Complained of stomach. "It is my stomach that bothers me. I feel a burning in the hollow of my stomach and I used to have chills during the night." Hearing defective in right ear, hears watch at distance of six inches. Gives history of carache the previous winter for about a week. Complained of not sleeping well. Reflexes all very lively.

Treatment: Custodial—hospital routine—tabs papayans for dyspepsia—Tinct. nux vomica—ext. cascara—Tinct. Gent. Comp. Elix. cala saya—for tonic laxative, with gain in weight of 13½ lbs.

Diagnosis: Not insane but of low mental standard, based on absence of morbid psychical symptoms, no hallucinations, clear consciousness, perfect orientation, good memory, attention well preserved, thought well connected and relevant, limited judgment and reasoning powers, normal emotional sphere and rational conduct with physical stigmata and expressing no delusions.

**Case No. 6.**—A woman 44 years of age. Heredity was denied by family, although her acquaintances state that the father was peculiar and very irritable and intemperate; patient was married at twenty—and has had five children, four of whom are living; her domestic life was very turbulent, her husband drinking hard and somewhat quarrelsome; was never socially inclined and was disposed to be of a retiring disposition; no marked religious fervor was ever manifested; alcohol and narcotics are denied: four or five years ago she began to talk about a conspiracy against her and thought persons were slandering her; quarreled openly with saloon keepers about selling liquor to her son and husband and became very bitter against the authorities because they failed to prosecute them; wrote many threatening and abusive letters to local authorities and other prominent persons accusing them of neglect of duty and immorality, and as a result was arrested four months previous to admission for "improper use of the mails"; about eight months previously broke window of a saloon with a stone or "allowed her little boy to do so," a notice of these acts being published in the local papers, she threatened the editor with "a horse whipping." On March 15, 1902, a clerk in the postoffice was murderously assaulted by night and she was naturally suspected as instigator of the plot. A newspaper account of the affair appeared accusing her in open terms. She thereupon secured a horse-whip and started out to whip the editor, being arrested and ordered here for observation March 1902. On admission showed no evidence of hallucinations. The principal trouble being the idea of conspiracy and persecution by prominent men of the city; several of these she interviewed and in each case it was noted that her ideas of persecution seemed the main burden of her talk together with manifold threats of vengeance. A medical certificate was also filed with her commitment which stated as follows: Patient said: "That there was a far-reaching conspiracy of the blackest kind against her—that her husband chased her with a razor, and in fact had cut her hand with it in order to force her to deed her property to him. Among her enemies were the ex-Gov-



ernor, a colonel, the sheriff and several prominent business men, who all conspired to assist her husband to get her sent to Waterbury that he might obtain possession of her property. That she had in her possession letters from lewd women to her husband asking him to meet them and in order to get her out of the way, he (her husband) had conspired with certain men to send her to an insane asylum or state's prison. That a prominent man asked her to give up her husband and come to Montreal. "He was only laying a trap for me." Appearance and manner: She feigned paralysis of the limbs and moaned and declared that she was unable to walk and was obliged to be carried to court room. Other facts: She has been in the habit of writing scurrilous letters to her so-called enemies and also to prominent people in the city complaining of her persecutors.

When taken to ward was not resistive, complied readily with hospital requirements but repeatedly stated that her being brought here was the result of a conspiracy against her; her attitude in the ward was very quiet; countenance seemed rather sad; orientation was good for time, place and persons, but had no insight, saying that it was absurd to think her insane, that she had been to the best authorities on insanity and had certificates from them that she was perfectly sane; hallucinations were denied; delusions of persecution and conspiracy were very persistent; said that the conspiracy had been constant since her husband wanted to get possession of her property and get her in an insane asylum; that the public officials were "backing him up" in order to accomplish it; that the high sheriff of the county had been in the conspiracy from the first and also the aldermen. Delusions of reference were doubtfully expressed; when asked if she had seen people on the street talking about her said she did not want to say as to that; said she would not say she had ever seen anyone around her house as it would be "a radical statement" and she "might have to prove it." March 21st reiterated her belief in a conspiracy—said that when she was arrested and in jail that as fast as she got bondsmen they were "bought up;" admitted threatening the local editor with a horse-whipping and that her son threw a stone through one of the aldermen's windows and justified herself in these acts on the ground of their persecuting her and she having the right to retaliate; a feeling of grandeur and self-importance and natural ability as a lawyer was very strongly expressed; said she had notified the judge that when her case came up that no attorney should represent

her whose name was not associated with hers—that she might conduct the case and he act only as counsel for technical points of law; stated that the sheriff brought a dishonest lawyer to defend her and refused to let her send for an honest one; said, "I have heard I am a person of great natural ability and insight as a lawyer, and they fear to meet me in court knowing I will utterly rout them, I will utterly destroy them in the eyes of the people." Memory was good for remote and recent events; intellect was clear, comprehended difficult matters quickly—no feeling of illness expressed; reaction to questions quick and to the point—no feeling of passivity—no retardation or negativism; remained in much the condition as described up to April 16th when permission was given to Judge Tyler for her to return home on a visit to her sick daughter—she was taken by deputy sheriff—remained there several days under his observation but after death of daughter escaped and was not returned to hospital until July 17; during absence had two pamphlets printed showing up "the conspiracy." These were distributed to prominent people generally throughout the State and when returned to hospital boasted that she had shown up the "fraud;" began to be very suspicious of officers of the institution, accusing them of being bribed to keep her there; delusions of persecution very strong; stated that she would demand a trial in court to show up the conspiracy—that she would conduct the case herself; that she was as good as ten lawyers; that while in this institution she had been very cunning, completely fooling the doctors, acting only as a sane person should so that "If any doctor says in court that I am insane I shall point my finger at him and say you are a liar, and I shall utterly destroy him as I have the Smithfield doctors." Oct. 31st removed to county jail by order of court and from Clerk of court it was learned that she was admitted to bail with the understanding that she should go to her friends in the West at once and that she should remain there.

Physically: On admission teeth absent on upper jaw; molars absent on lower jaw; beginning arcus senilis; slight fibrillary twitching along tip and margin of tongue; otherwise negative.

Urinalysis: March 20th; diminished chlorides, few round cells agglutinated, many leucocytes, few hyaline casts, March 24th, twenty-four hour test 1660 C. C.—urea 19.9 grams, moderate number round cells, many leucocytes. July 18th excess chlorides, otherwise negative. One month later normal.

Etiology: Heredity? (father intemperate and irritable) domestic infelicity.

Duration: About ten years at home—in hospital one month first time, three and one-half months after return from visit.

Treatment: Custodial—effervescent vichy as a diuretic with good result.

Diagnosis: Paranoia (querulous or litigious form) on ground of the well systematized delusion of persecution and reaction threats with many threats of violence through courts of law, publishing scurrilous articles involving public officials, delusions of self importance, "great natural ability as a lawyer," etc.

Prognosis: Will not recover but will probably progress to mild amount of dementia after some years.

**Case No. 7.**—A young man aged 18, native of Vermont, common school education, single, no occupation, family history good. He has always been rather backward about his school work, the more so after an injury to his head, caused by a wagon wheel from a "light buggy" with a single occupant, passing over his shoulder and diagonally across his head. He recovered quickly from this and was out again in about a week or so. Divers citations are given to show a somewhat immature and childish state of mind. Some few of them are as follows: Seems to have strange ideas, dealt strangely with different people, bought high grade bicycle, a \$25 camera, borrowed money to take a trip to New York once, once intercepted, again successful in his attempt (his father lives in N. Y.) and numerous queer things. Has written for the agency of several large automobile firms and spends considerable time in drawing plans of automobiles which he does creditably and shows considerable knowledge of machinery. This is in harmony with his ambition to become an engineer. He built a fire in a wood shed where wood was piled without thinking of the danger and he ordered groceries sent home without instructions, and just prior to admission he broke into a church safe during the day time, leaving the church through an open door and took some 25 or 26 dollars in small change. Admitted here for observation Dec. 30, 1903. Here morbid psychological symptoms of an irritative character have not been manifest at any time. Examination failed to elicit hallucinations of any type, consciousness clear, apprehension good for matters within the scope of his mental horizon and orientation is perfect, memory tenacious for both recent and remote events and attention is of normal power, thought is connected, relevant and of reasonable content, being influenced by no delusions so far as can be determined,

judgment and reason are on the whole of rather immature type—this is evident from his history and from the impression derived during repeated conversations with him—rather than from any specific instances of mental deficiencies. He talks freely about robbing the safe and describes fully his method of doing so, gives as reason that it "popped into his head to do so." Insight: "No sir. I was not crazy, but it was foolish. I am sorry I did it. I was never arrested nor had any trouble before and have had a good reputation. My lawyer thought my buying a big wallet was foolish. I was not influenced to do it by any power. Never have been influenced to do things against my will, guess it looks as if I did it just as anybody would. I denied it at first, but admitted it after a time." Neither emotionally or volitionally is there anything indicative of morbid influences.

Physical: Jan. 2, 1904. Teeth poor condition, lateral upper incisors displaced inward, palate high, narrow in front, small scar on right eye brow caused by wheel from "buggy," small Darwinian tubercles, lobules semi-adherent, felt all right except that "eyes bother me when I read much," hearing diminished in left ear, hears watch at about six inches and is slightly impaired in right ear, right pupil somewhat irregular, reacting but slightly to accommodation, internal strabismus of left eye reflexes somewhat exaggerated especially at right knee, heart displaced somewhat to right, apex beat felt most plainly in epigastric region, has had a good appetite and sleeps well, with normal temperature.

Urinalysis: Dec. 31, 1903, sp. gr. 1025, phosphates 2.4 per cent.; numerous calcium oxalate crystals.

Treatment: Custodial and hospital routine, tonic of syrup hypophosphites comp. with no change in condition, weight constant.

Diagnosis: Not insane but with a mental standard somewhat below the average based on an absence of morbid psychical phenomena and a history pointing toward immaturity of judgment which impression is further strengthened by his conversation.

**Case No. 8.**—A man aged 54; native of Canada; single; meagre education—can read and write—paints in a desultory way for a living; has been a moderate partaker of alcoholic spirits; history is meagre and describes him as being "odd, different from the rest of his relatives in habits and dress and of indolent disposition." Spoken of as being out of his head 10 or 12 years since he has professed to be "sanctified;" said to have prayed and talked all night, seemingly morbid on subject of re-



ligion—at one time believed the devil chased him out of the house—has never shown any violence; no suicidal tendencies shown; always cleanly—said to have had “kidney trouble,” and this is mentioned as a probable cause of his insanity; has never been in an institution before and was confined here Oct. 22, 1903, as an observation case on the “charge of rape;” here has been in a stationary condition since admission. Hallucinations are absent; consciousness perfectly clear; apprehension good for all matters within reach of his understanding; orientation accurate for time, place and persons; memory well preserved for both remote and recent events; attention of normal acuteness; thought is connected and relevant and shows no retardation in evolution; content of thought displays a mind of small capacity and capable of dealing only with matters of simple nature; his efforts at present are to convey the impression that his mind is gone and the following quotations will show his efforts in this direction: “I don’t rest well nights for I grieved the Holy Spirit because I had bad habits and it disturbs my mind; I have tried to throw them off—the way I explain it is, I cannot control my mind, my mind is caught—I am in hopes your medicine will cure me. When I see a woman I cannot control myself, my mind is caught away—the people all around the block called me crazy—I tried to do painting but my mind was so weak that I was not rational and could not do business. I live in hopes that the medicine may do me good and that I may be brought to my right mind—the mind is partially deranged—I call it grabbed where women are concerned—the devil is my enemy that grabs my mind and energy, I want my soul saved, I want to go to heaven, I might say that I have no mind that it is grabbed and continually in the hands of the enemy, my business capacity is destroyed, I have an idea I have been crazy for 14 or 15 months.” Judgment and reason are of feeble power and limited in scope—owing to meagre education and limited native endowment; no delusions except statements made in efforts to simulate insanity; emotionally there has been no morbid manifestations and volitionally there appears to be nothing denoting a condition contrary to his normal state of mind; conduct is in harmony with his surroundings and his chief aim is to convey the impression that he is insane. At one time he sat talking to himself and from time to time looking up furtively to see if he was being watched. In appearance he strikes one as being below the average in all things that make up a bright, keen, ambitious person.

Physically: Oct. 26, 1903, testicles small and unequal in size, the left being much the smaller. Said, “I feel dizzy and when I walk I feel like a drunken man.” Could walk a crack very easily; hearing impaired, apparently in both ears, tremor of tongue, speech unaffected.

Urinalysis: Feb. 19, 1904, practically normal.

Treatment: Custodial—hospital routine—P. & P. tablets for digestion—laxative tablets—with no change in condition—lost five lbs. since admission.

Diagnosis: Simulation in one whose mental standard is below the average—based on an absence of morbid psychical symptoms—repeated examinations reveal clear and healthy perceptions, clear consciousness—perfect orientation—normal apprehension—good memory and average attention power—thought clear—relevant and connected—though meagre and limited in scope—weak judgment and reason—no emotional or volitional disturbances—earnest desire to create belief that his mind is gone.

The following histories of observation cases serve to show the actual working of the present system as in vogue at the State Hospital. The system is a unique one in that only a few States have taken advantage of this method of determining the truth or falsity of the plea of insanity.

In concluding I wish to acknowledge using the work of my co-laborers to illustrate the subject of my paper and thank them for the same.

Still another feature of the actual working of this plan, I wish to mention before closing and that is the following criticism: By actual experience it has been demonstrated, both from a material and moral standpoint, that there are great disadvantages and manifest inproprieties in attempting to treat under one roof the criminal and non-criminal insane. To be sure, the wards for the criminal insane are somewhat separated in our State institution but the influence of this class upon the rest of the institution is distinctly harmful. Abundant testimony to the truth of this conclusion can be found in many hospital reports. The presence of the criminal class serves as a continual hindrance toward enforcing more sympathetic treatment from those in immediate charge. In order to reduce restraint to a minimum, this class ought to be separated entirely and their apartments made correspondingly secure so as to foil ingenious attempts to escape. The impropriety and injustice of the present plan cannot fail to force itself on the minds of individuals who look at

the matter as it really stands. In our State Hospital for the Insane we have had upwards of fifty criminal insane during the past year and the vast majority of these have been indicted for capital crimes like murder, rape, arson, assault with intent to kill, etc., and most respectable innocent persons have been obliged to associate with them. It is time that the regular criminal wards on the male side of the institution are separated to some extent, but on the female wards such criminals as Mildred Brewster, "Nellie Popcorn" and Lottie Baker are associating daily with some of the most highly educated and innocently deranged persons as is possible to find, and as such a state of affairs must of necessity be harmful, this condition of affairs ought to be remedied by proper legislation in the form of an appropriation which should provide for separate care of the innocently deranged from the criminal insane.

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### PREVENTIVE MEDICINE.

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*By H. L. Manchester, M. D., of Pawlet, Vt.*

My reason for preparing a paper upon this subject to present here, is that I think that is just the place to read it, and to appeal to the physicians of this county and through them to the people for a more enthusiastic support of the efforts being made to improve the health of the general public in Vermont.

There is evidence, in almost every locality, of a lack of harmony between the public and the health officials. Not so much open opposition as careless neglect to conform to the laws bearing upon this subject. It is impossible to get the best result from a wise sumptuary law if we are compelled to enforce it. When all obey willingly and cheerfully with an earnest desire to abide by its provisions, the object sought for is much more easily reached and the benefits greatly increased. There is no class of persons from whom so much can be obtained in this direction as the physicians when they choose to exert their influence. It is not enough that they know and obey the laws of hygiene but they must become teachers as well, indefatigably working to prevent the people who entrust to them the health of their families from carelessly and negligently exposing themselves to dangers which might and should be avoided.

The progress made within the past twenty years toward demonstrating that many diseases can not only be successfully controlled when present, but can be wholly eradicated, is particularly gratifying. The limit of effort in

this line is not and never can be reached. The hope that the time will ever come when disease is unknown is with our present light, outside the bounds of serious consideration, but that many diseases which now exist can be driven out and the severity of those that remain may be so modified that their terrors will, in a measure, disappear is not a Utopian belief. It is a very short time indeed since yellow fever was considered an almost incurable malady, and certain localities within the confines of our own country could never be said to be free from this terrible scourge. To-day, through the well-directed and self-sacrificing efforts of one or two men, it has become amenable to control and has lost its terrifying aspect. Malaria which was probably one of the most prolific sources of human suffering, is being brought under the strong influence of scientific investigation with the result that it is gradually disappearing from the face of the earth. Diphtheria, that most disgustingly fatal of diseases only fifteen years ago, is now fought to a finish and beaten so often that it has been reduced from the front rank in our mortuary records and is being stamped out by the steady unflagging march of sanitary science. The disease is not only being successfully treated, but its very life is seriously threatened, by means given us by men who thought no honor greater than that of having lent their lives to the alleviation of suffering in the world.

It is not only to the class of diseases called communicable that our efforts should be directed. Although the number of such diseases is constantly increasing, and like the number of chemical elements, may and probably will steadily grow, we can prevent many of the digestive disorders by a proper attention to the food and water supply. There is no shadow of doubt about the inestimable value of a frequent examination of all drinking water, not waiting until illness appears but once, twice or more times every year the water used for drinking should be subjected to a careful analysis of its composition. This does not apply to public sources only but to that used by families everywhere. The old walled well, perhaps located within a few feet of a privy vault or other source of contamination, which exhibits the clear cold water, famed locally for its purity, may be filled with the germs of disease.

The knowledge of dietetics is much more widely disseminated than formerly, but the absolute ignorance regarding the proper adequate ration which contains nothing deleterious to health is astounding to-day. Not only the quantity and quality, but the manner of pre-



paring it, and the method of disposing of it is almost wholly disregarded in the rush and turmoil of much more trivial matters. It is of the utmost importance that the food taken to restore the natural waste of tissue should be such as would most easily and effectively accomplish that purpose. Of no less importance is the fact that if the body and mind are wearied by toil, the digestive functions cannot be properly performed. The dietary of a man should change with the advancing years. It is not changed in the slightest and the need of it is not recognized by the great majority of men. The table is loaded three times a day with food of the same character when those who partake are fifty or more years of age as when they were twenty. This is essentially wrong and I believe productive of much suffering and disease, which could be prevented by a little education in this line.

The members of this society have the means, by reason of the influential position they occupy in their respective communities of impressing upon the people the great importance of working in harmony with their health officials. When a suspicious disease appears there should be no delay in reporting the fact to the health officer. This will be done just as soon as the family physician assures them that it is for their personal interests to do so. It is rare that a family is injured pecuniarily by the act of the health officer but if they do suffer pecuniary loss, and their circumstances do not permit it they are not allowed to suffer. But the great point involved is the relationship that each member of the body politic bears to the whole. This is of the utmost importance to everyone. As soon as each one acknowledges that his neighbor has rights that must be recognized it will be easy to protect the public from contagious disease.

One of the prominent members of our national legislature recently said that "laws are of no advantage unless there is a public sentiment which demands their enforcement," and that sentiment can be created as regards health laws by medical men who are not officially connected with health boards better than by anyone else. They are free from the imputation of any personal pecuniary gain. Their words are weighed in the scale of their patients' opinions fairly and justly and the result cannot fail to be of infinite good to the community. We have all over our State, even in the smallest village, associations to care for and beautify the streets and cemeteries. They do great good. There are societies for the prevention of cruelty to animals which have prevented much suffering to the lower creatures of animal life. Libra-

ries, the value of which cannot be easily estimated, nor their cost readily computed, are established and continue to grow everywhere within our boundaries. Hospitals, for the cure of disease are built and equipped with apparatus which enables the physician to return his patients to their homes and friends greatly benefitted and many times completely cured, when without the care and constant attention given them in these institutions they would surely die, but where can be found in Vermont a place where anything is being done for people who are in health to prevent them from contracting disease beyond the efforts of the health officer who is often unaided in his work and more than this many times opposed by the very ones he is attempting to help. The annual school for health officers which is open to any one who wishes to attend, attracts few outside of the health officers. Members of local boards of health rarely attend and others almost never. In spite of this the school grows in importance and value to the State every year. Men of national reputation are engaged as speakers, who never fail to bring ideas and reports of good work well done which encourage the health officer to renewed efforts, and is gradually producing good results. In addition to this every local board of health should once, or more than once a year, hold a meeting to which the local public should be invited and urged to attend, where someone of experience and standing in the work should address them, explaining the object of the laws and the necessity of their enforcement with statistics of results where they had been executed. It would be of great and lasting benefit.

The average length of human life is greater than ever, but we do not have as many old people. The increase is due to the more intelligent care of the infant. Diarrheal diseases, which formerly carried off so many children, are being prevented and controlled by educating the mother and nurse to the proper method of feeding and otherwise caring for her child. Now we can still farther extend the limit of our years by caring for the children of larger growth and the means of doing this are controlled by you more than any other class of men. Whether or not you care to make the effort, I do not know, but if you do, I have that faith in the medical profession that I believe that you will succeed. It has been said of the husbandman that he, who makes two blades of grass grow where only one grew before, adds to the world's wealth, and I say that he who adds one span to the length of human life, or who by his efforts, causes that life to be one of joy and happiness instead of suffering and

gloom, does more than add to the wealth of the world, he lays up treasure "where rust doth not corrupt nor thieves break through and steal."

## BRONCHO-PNEUMONIA IN CHILDREN.

*By L. A. Newcomb, M. D., of Montpelier, Vt.*

Broncho-Pneumonia is essentially the pneumonia of childhood. Under two years of age the great majority of cases of primary pneumonia are of this variety, and throughout childhood nearly all the cases of secondary pneumonia.

**Etiology.**—Age. After four years of age broncho-pneumonia is not common as a primary disease, but is met with as a complication of other diseases during childhood. Holt states that out of 426 cases 53% occurred during the first year, and 33% during the second—making a total of 86% occurring during the first two years.

In primary cases males are somewhat more frequently affected than females. In the secondary cases the sexes are about equally affected. Broncho-pneumonia is a disease of all classes, but is most frequently met with in children having poor hygienic surroundings.

By far the most common form in which we meet with broncho-pneumonia is as a complication of a number of acute infectious diseases, in which the air passages are primarily affected, or in which they may very readily be involved sympathetically. Chief among these are measles and whooping cough. In all these diseases there is either a bronchitis at the beginning, or else it can develop very easily in them. It is in these same diseases, also, that simple bronchitis comparatively often develops into broncho-pneumonia.

Our present knowledge of the bacteriology of broncho-pneumonia may be summed up as follows: In the primary cases the pneumococcus is nearly always present, and in a large proportion of the cases it occurs alone. In cases of mixed infection it is most frequently associated with the streptococcus. The secondary cases are usually due to a mixed infection.

**Lesions.**—It is characteristic of broncho-pneumonia that the inflammation is usually plainly circumscribed being limited to the territory of a small bronchus. The inflammatory process itself consists of the exudation of a scanty fluid, which usually does not coagulate,

and of numerous pus corpuscles into the lumen of the alveoli. With this is usually associated more or less marked desquamation of the alveolar epithelium, in which we often find necrosis or fatty degeneration. And the alveola cavities are filled with leucocytes and epithelium.

Broncho-pneumonia may terminate, first; by death, which may occur at any stage; or the pathological process may be arrested at any time and the case go on to recovery. In such cases recovery is usually rapid and complete. In many cases, especially those in which it is delayed, resolution is only partial, and there are relapses or recurring attacks. After the first, or after several attacks, there may develop a chronic interstitial pneumonia, or simple pneumonia may be followed by tuberculosis.

**Symptoms.**—The clinical picture presented by broncho-pneumonia is an exceedingly varied one. There is no typical course, and the cases differ from each other very markedly. They may be divided into three more or less distinct groups.

An acute congestive type may be seen at any age but is most frequent in young infants. Its symptoms are few and irregular, and the disease is often unrecognized. The duration may be only 24 hours. High temperature, extreme prostration, cyanosis, and rapid respiration may be the only symptoms. The temperature varies between 104° and 107° F., usually rising steadily until death occurs. If the child is sufficiently strong to withstand the first onset of the violent symptoms they may recover completely in four or five days; the lung clearing up rapidly. In other cases these grave symptoms may abate in a day or two, to be followed by those of ordinary broncho-pneumonia, which runs its usual course. Cyanosis is usually present. Respirations are from 60 to 80 per minute, and in most cases are strikingly labored. Cough is frequently absent. Cerebral symptoms are often marked. There is dullness and apathy, sometimes even profound stupor and convulsions. The physical signs are few and inconclusive. There may be nothing abnormal except very rude breathing. There may be no rales whatever and no change in the percussion note.

In acute disseminated broncho-pneumonia (capillary bronchitis) the symptoms are due chiefly to the bronchitis. The onset is acute, with fever, rapid and labored breathing, severe cough, moderate prostration and, in most cases, cyanosis.

There are at first sibilant and afterward subcrepitant rales over the entire chest. These

\*Read before the Washington County Medical Society, June 3, 1905.



are usually mingled with coarser moist rales. There are no evidences of consolidation. The prognosis in this class of cases is very much better than in the congestive type; recovery being probable unless the patients are very young or very delicate infants.

When primary, broncho-pneumonia of the common type usually begins suddenly. When the onset is sudden it is marked by high fever, rapid respirations, cough, prostration and sometimes cyanosis. The temperature is high as a rule, but is apt to be remittent in type. The cough is very distressing, being sometimes almost incessant. Respiration rapid and labored. Pain in chest is not common but may be present. Occurring as a secondary lesion during the convalescence from measles or whooping cough, the child has an accession of fever with cough, rapid pulse and rapid breathing. The fever is extremely variable and may range from 102° to 104° F. The physical signs may at first be those of simple bronchitis, as indicated by the absence of dullness, and the presence of fine subcrepitant and whistling rales. Death may take place before any definite pneumonic signs are detected. When these exist they are more frequent at the bases, where there may be areas of impaired resonance or even positive dullness. When numerous foci involve the greater part of a lobe the breathing may become tubular, but in the scattered patches of ordinary broncho-pneumonia the breathing is more commonly harsh than blowing.

**Diagnosis.**—The diagnosis of broncho-pneumonia is not always easy; to differentiate between pure bronchitis and pure pneumonia is sometimes well-nigh impossible. Such a bronchitis often begins with severe pulmonary symptoms and a temperature of 103° to 104°, but this high temperature is of short duration, usually falling after 24 or 48 hours to 100° or 101°. The prostration is much less, and all the symptoms, possibly excepting the cough, less severe. The only physical signs are coarse rales, which are heard throughout the chest. There are no signs of consolidation. If instead of being generalized, the signs of bronchitis are limited to a single lung or to one lung post., the existence of broncho-pneumonia may be regarded as well-nigh certain. Localized bronchitis, then is usually to be interpreted as broncho-pneumonia, provided tuberculosis can be excluded. The diagnosis of a developing tuberculosis is not always easy, since it is only rarely that marked phthisical changes that can be made out by a physical

examination are found in the lung. We can usually suspect tuberculosis only from the general conditions, viz.; emaciation, persistent hectic fever, hereditary predisposition, or some secondary tubercular disease. Absolute proof, from the detection of tubercle bacilli, is only rarely possible in children.

With lobar pneumonia it may be readily confounded if the areas of consolidation are large and merged together. Age is an important point of difference. More than half the cases of broncho-pneumonia are secondary, while lobar pneumonia is almost always primary. Broncho-pneumonia often beginning insidiously in the course of, or following another disease, lobar setting in abruptly in a child in good health. In lobar pneumonia the disease is almost always unilateral; in broncho-pneumonia bilateral.

In broncho-pneumonia the signs of bronchitis are mingled with those of consolidation. Rales appear in other parts of the same lung or in the opposite lung throughout the disease. In lobar pneumonia rales are only met with early and during resolution, and there are frequently no signs in the opposite lung. Again in broncho-pneumonia there is no typical course to the fever, which often lasts three or four weeks, and rarely terminates by crisis; whereas in lobar pneumonia the fever runs a typical course, terminating by crisis from the fifth to eighth day. In lobar pneumonia resolution is rapid and usually complete within a week. In broncho-pneumonia it is slow, often incomplete and shows a strong tendency to become chronic.

**Prognosis.**—Broncho-pneumonia is always a serious disease. The prognosis depends upon the age, surroundings and previous condition of the patient, whether the disease is primary or secondary, and, if the latter, upon the character of the primary disease. In private practice the mortality is variously given at from 10 to 30%, depending upon the conditions above mentioned. In making the prognosis in any given case, the symptoms to be considered are the height and course of the temperature, the presence or absence of nervous symptoms, the condition of the organs of digestion, the presence of cyanosis and the extent of the disease as shown by the physical signs. The existence of vomiting, diarrhoea, or severe indigestion makes the issue doubtful. These conditions are particularly important in protracted cases, where death is usually due to slow asthenia.

**Treatment.**—The most important part of prophylaxis is to give careful and early atten-

tion to every attack of bronchitis in a child. Much can also be done to avoid the probability of an attack, after febrile affections. In convalescence from measles and whooping cough it is important that the child should not be exposed to cold. The catarrhal troubles of the nose and throat should be attended to, and during fevers the mouth should be washed two or three times a day with an antiseptic solution. I shall not take the time of this audience to drone over the prescriptions for pneumonia in children. The problem is how to sustain the patient in overcoming the toxemia, the manifestations being fever, stupor, restlessness, delirium, disturbed circulation, heart fatigue and persistent cough.

First, fresh air. Preferably a large room with southern exposure. Bed in middle of the room with patient's eyes directed away from the bright light. Air should be fresh and cool. Temperature about 65° F. A child with pneumonia should not be obliged to breathe five times when three times will do. No one catches cold from fresh air entering the nostrils or from fresh, cool, flowing air striking the oval of the face. There is little fear of a fever patient catching cold in bed. Second, water, plenty of it in small quantities, cool and fresh. It refreshes the patient and facilitates natural elimination. Third, free evacuation of the bowels at the very outset. This is best effected by castor oil in full doses, with or without previous calomel. Fourth, correct indigestion, and regulate the food to prevent the fermentation and the formation of gas. The pressure upon the heart and lungs by a gas-filled stomach and colon does not leave a fair field to nature. When gas is present, high rectal irrigations of a hot salt solution often act favorably. Fifth, quiet and rest—a point in treatment often easily forgotten. The sick room should not be the gathering place of the family and friends; and the neighbors should not find the door of the sick room ajar to every comer. Coal-tar antipyretics should, as a rule, I believe, be avoided. This may also be said of cough syrups which are likely to upset the patient's digestion and give rise to fermentation. A cloth wrung out of cold or cool water and applied to the forehead and temples, with frequent sponging of the face, wetting of the lips and sponging of hands and wrists, accomplishes much. It both cools and refreshes the patient.

Heart stimulation is not always needed. When a heart is acting badly in pneumonia it is well to see how much gas there is in the abdomen, how clammy and cold the feet are

and how hot the head. High hot salines and hot foot baths with or without mustard together with cold applications to the head, will oftentimes work wonders with that kind of heart trouble. If heart stimulants are required, strychnine and whiskey may be very advantageously employed. Promote the general comfort of the patient in every way possible. This calls for tranquil surroundings, regular and intelligent feeding, allowing long sleeps and the employment of a conscientious, competent attendant.

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### VERMONT'S RECIPROCITY.

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Since the last report in this journal of the reciprocal relations of Vermont with other States in the matter of medical registration, several additions have been made to the list, so that we now reciprocate with Maine, Maryland, Michigan, New Jersey, Wisconsin, Illinois, Ohio, Texas, Wyoming, North Dakota, and the District of Columbia. The question has been asked what one must do after receiving a certificate from Vermont in order to be accepted in other States. To this, Dr. Nay, secretary of the Vermont State Board of Medical Registration, replies as follows:

"I do not understand that it is necessary to register in any State until one is good and ready, as the certificate will be recognized at any time. The *modus operandi* is to get an 'Endorsement certificate' from the secretary of the State Board with which one desires to reciprocate, which, when properly filled in, and the required fee paid, and recorded in such office as designated, completes the act."

The questions of the examination given in July follow:

#### ANATOMY.

1. Name and describe four classes of tissue which enter into the formation of the human body.
2. Describe the bony pelvis, and state what bounds the cavity of the pelvis above.
3. Give three general classifications of joints. Describe the elbow-joint.
4. Name the muscles of the abdomen, and give the origin, insertion, nerve supply, and action of any one of them.
5. Name the cavities, openings, and valves of the heart.
6. Give the collateral circulation when the brachial artery has been ligated just below its profunda branches.
7. Describe Scarpa's triangle and name its contents.
8. Name the organs and parts of organs located in the left hypochondriac region.
9. Give the columns, fissures, and blood supply of the spinal cord.



10. What abdominal viscera and parts of viscera have no peritoneal investment?

## PHYSIOLOGY AND HYGIENE.

1. Give the classifications of efferent nerves.
2. Give the properties and functions, of the medulla oblongata.
3. State the physiological properties of nerve cells.
4. Give the action of the salivary secretion on starch.
5. Give the products of intestinal digestion, and state the disposition made of these products.
6. Describe the plasma of the blood and give its constituents.
7. Describe the changes of the blood coagulation.
8. Name the most frequent abnormal constituents of urine, and way of detection in three of them.
9. Describe the lymphatic system, giving its functions.
10. How is the temperature of the body kept at the standard?
  1. Name the contagious diseases for which you would quarantine.
  2. Give the rules and time for which you would quarantine four of them.
  3. State the duties and obligations of the family physician in regard to the hygiene of school children.
  4. Tell how you would build and furnish a school-house, observing hygienic rules.
  5. How would you manage a case of phthisis pulmonalis, to avoid danger to other members of the family.

## CHEMISTRY.

1. a. What is meant by the term molecule?  
b. What is believed in regard to the movement of molecules in gases, liquids, solids?
2. In case of defective drainage causing sickness, how would you detect such in water? State your tests.
3. How would you test a suspected mixture for arsenic? State the test you would use and the reactions.  
what other substances might be mistaken for arsenic and how can they be distinguished?
4. a. What is the difference between a Ferrous and a Ferric Salt?  
b. Illustrate the difference between Symbol, Formula Equation. What information does each convey?
5. a. Name the organic and inorganic constituents of urine.  
b. Name the abnormal constituents of urine and give the tests for the same.

## MATERIA MEDICA.

1. a. Give origin and properties of Mercury.  
b. Name five preparations and give their dose.  
c. Briefly give the physiological action upon the digestive and circulatory systems.
2. Name five antiseptics and five antispasmodics used in medicine and give dose of each.
3. a. Describe the mechanism of purgation.  
b. Classify Cathartics according to their mode of action.  
c. Classify according to the anatomical portion of the intestinal canal on which they act.  
d. Name four of each and give dose of same.

4. a. Name four diuretics acting upon  
1st, arterial pressure.  
2nd, locally on kidneys.  
3rd, upon secreting nerves and renal cells.  
b. What are Lithontriptics?
5. a. Give official preparations of aconite and their dose.  
b. Describe its action upon the circulatory and respiratory systems.

## PRACTICE OF MEDICINE.

1. Give the differential diagnosis between chronic bronchitis, tuberculosis of the lungs, pneumonia and pleurisy.
2. Give the etiology, symptoms and proper treatment of measles.
3. Describe urticaria. What are its most common causes and what treatment would you recommend for it?
4. What are the symptoms and general course of aneurism of the aorta and how would you treat a case?
5. Describe the life history of *tænia solium*, the symptoms which it causes and its proper treatment.
6. Describe the etiology and pathology of cirrhosis of the liver.
7. Describe the pathology and symptoms of Addison's Disease.
8. How would you distinguish pyelitis from cystitis? Give treatment for each.
9. Give causes, symptoms and proper treatment for malarial fever.
10. Give etiology, symptoms and prophylaxis of yellow fever.

## SURGERY.

1. Name the principal bacteria and the surgical diseases produced by each.
2. Name the varieties of wounds and seven methods of stopping hemorrhage.
3. Name the usual methods of healing in wounds, and describe how it is accomplished.
4. Describe thrombosis and embolism, how caused, symptoms and treatment.
5. Give cause, symptoms and treatment of caries and necrosis.
6. Give causes, and treatment of ununited fracture.
7. Describe in detail the method of ligating arteries.
8. Differentiate between coma from injury and apoplexy, uremia, epilepsy, diabetes, opium poisoning and alcoholic intoxication.
9. Diagnose a case of hip joint disease.
10. Describe in detail removal of the breast.

## OBSTETRICS AND GYNECOLOGY.

1. Give symptoms of pregnancy.
2. Give treatment of abortion.
3. Describe a normal labor.
4. Give mechanism of face presentation.
5. How and for what reasons would you perform version?
6. What complications may result from infection after delivery?
7. What is eclampsia?
8. What is inertia and cause of same?
9. Describe application of forceps to a head presentation.
10. What is treatment of post-partum hemorrhage?
  1. Give symptoms indicative of pelvic disease.
  2. Treatment of ovaritis.
  3. Differentiate uterine fibroid and ovarian cyst.

4. Give treatment of vaginal catarrh.
5. What is amenorrhoea and when does it occur?

## THEORY AND PATHOLOGY.

1. Name five self-limited diseases.
2. Why does not every person exposed to an infectious disease take it?
3. Explain the more recent theories of immunity.
4. What are phagocytes and what is their role in the prevention of disease?
5. What are the symptoms and pathologic changes in progressive bulbar paralysis?

## BACTERIOLOGY.

1. What are the general requisites for a nutrient media.
2. Name and describe the most common pyogenic organism.
3. How would you prove a certain specific micro-organism to be the cause of a certain specific disease?
4. What is there peculiar in the behavior of the tubercle bacillus toward staining solutions?
5. What micro-organisms would you expect to find in the pus from a psoas abscess?

## LEGAL MEDICINE.

1. Define syncope, asphyxia and coma. Give examples.
2. What is the difference between a medicine and a poison?
3. Explain the terms mania, monomania, dementia and idiocy.
4. On what would you base your opinion that a child had been born alive at term?
5. Give causes of death during the birth of the child.

## THE INCREASING PREVALENCE OF CANCER.

The first annual report of the American Oncologic Hospital of Philadelphia, just issued, includes an interesting study of the prevalence of cancer in America. Statistics are given from Philadelphia, New Orleans, Boston, New York, San Francisco, St. Louis, and Baltimore, showing the deaths from cancer and the rate of cancer deaths per million of population for periods of 34 to 60 years. Regarding the gathering of the statistics the report has this to say:

The prevalence of cancerous affections in a community is at present ascertained only by noting the number of deaths recorded from these diseases, as no provision has ever been made for gathering the statistics of living persons so afflicted. In this country even the record of deaths is imperfect outside the large registration cities, not more than two or three States having laws on the subject, and in these few the legislation is of recent date. The Pennsylvania law requiring registration of all deaths was passed only during the session of 1905.

Under such circumstances the United States Census Reports on this subject can be of little value, the returns being fragmentary and often covering but a portion of the census year.

In the countries of northern Europe, where general registration of deaths has long been obligatory, recent studies of cancer mortality have shown quite conclusively that the ratio of these deaths to the population has more than doubled during the last forty years.

To determine whether similar conditions exist in this country we have but one recourse: the figures contained in the mortality reports of the large cities, which have quite generally enforced registration of all deaths since the year 1860, or thereabouts. In New Orleans our inquiries show an earlier date for the beginning of these records, reports having been furnished covering all years since 1844, with some omissions.

The municipal statistics of cancer mortality given in this paper have been gathered by correspondence with the Registrars of Vital Statistics of the several cities and are official. Except for a partial report compiled by a member of the staff that appeared in the American Journal of Medical Sciences for February, 1900, they are here published for the first time.

For purposes of comparison with an older country, a similar table showing the cancer mortality of England and Wales for thirty-two years preceding 1895 is appended, taken from the Report of the Registrar General of those countries. It is a remarkable fact that these figures show about the same increase of the cancer ratio in the whole population of England and Wales as has occurred in the American cities mentioned, and the fact that this increase reached to more than 750 per million in the older countries eight years before the same figure was reached in America is a confirmation of the theory that our modern civilization has some contributory relation to the cause of the disease.

It is also a singular coincidence that the final figures of the English and American tables, 755 per million, are exactly similar in the two countries, though separated by eight years in time.

It should be stated, however, that the ratios of actual increase in deaths from cancer shown in the following pages are subject to at least two modifying conditions which should lessen their meaning somewhat. One of these conditions is the fact that cancerous growths arising primarily in certain internal organs are probably now recognized more frequently than in the past, thus artificially increasing the ratio.

The other modifying condition is the increas-



ing longevity of children due to the decreasing mortality of many infantile disorders, now happily under better medical control. A decreasing death rate in the first half of life brings into artificial prominence the death rates of adults, when compared with the total population.

With full allowance for such possible corrections, the figures still show that cancerous affections are increasing at a rate that demands the earnest attention of all thoughtful persons.

The combined statistics of the seven cities mentioned are tabulated as follows:

YEAR	Total Deaths from Cancer.	Ratio of Annual Deaths from Can- cer in each Million of persons living.	YEAR	Total Deaths from Cancer.	Ratio of Annual Deaths from Can- cer in each Million of persons living.	YEAR	Total Deaths from Cancer.	Ratio of Annual Deaths from Can- cer in each Million of persons living.
1870..	999	354	1882..	2002	540	1894..	2872	586
1871..	970	325	1883..	2048	555	1895..	3163	656
1872..	1050	325	1884..	2175	568	1896..	3274	645
1873..	1156	368	1885..	2113	493	1897..	3400	649
1874..	1230	381	1886..	2228	557	1898*	4243	664
1875..	1209	352	1887..	2372	534	1899..	4349	602
1876..	1289	365	1888..	2319	524	1900..	4696	663
1877..	1424	404	1889..	2426	538	1901..	4898	679
1878..	1629	444	1890..	2759	624	1902..	5234	716
1879..	1633	441	1891..	2696	591	1903..	5592	755
1880..	1816	512	1892..	2818	600			
1881..	1929	517	1893..	2822	585			

\*The figures for 1898 and after include the added territory of Greater New York.

## A NEW LOCAL ANESTHETIC.

The ideal local anesthetic should fulfill a number of requirements; it should exert simply anesthetic action; it should not irritate the eye, should be non-toxic, easily sterilized without decomposition, and be cheap in price. In this connection Stephenson, of London, compares the relative merits of the old favorite, cocaine, and the new aspirant for anesthetic honors, alypin. He mentions the fact that death has resulted from the hypodermic injection of one-quarter of a grain of cocaine and that gangrene has resulted from the hypodermic use of some of its substitutes. Tetanic-like spasms have been caused by holocaine injected subcutaneously. Cocaine dries the epithelium of the cornea when prolonged in its use, is highly mydriatic and sometimes causes increased tension of the eye-

ball. In spite of these and a number of other objections, it still stands at the head of the list as a local anesthetic.

Alypin, a white, crystalline neutral powder, extremely soluble in water, has so far given very satisfactory results. It is a synthetic drug, in no wise impaired in its action or decomposed by boiling, a most important consideration in deciding a choice for a local anesthetic, the very lack of which quality constitutes one of the great objections to the hypodermic use of cocaine. Alypin is very anesthetic to the cornea and with but one-half of the toxic action of its rival. A 2 per cent. solution used several hundred times in the course of treatment of several weeks' duration has produced no deleterious effect, nor does the age of the subject seem to influence its action. Dropped in the eye there is some smarting, but not so marked as noticed when cocaine is used. In one minute the cornea is insensitive. The vessels of the limbs are slightly congested. No dilatation of the pupil has thus far been reported, while accommodation remains unimpaired. The corneal epithelium is not dried in the least. There is no increase in intra-ocular tension. Stephenson has used the drug as a means for anesthetizing the eye for the removal of foreign bodies, for iridectomy, discissions and cataract extractions, and has found its action equally as good as an anesthetic as cocaine and presenting none of the objections of the latter remedy. As a subcutaneous anesthetic agent for removal of tarsal tumors, a few drops of a 2 per cent. solution of alypin have yielded in his hands perfectly satisfactory results. "I therefore conclude," he says, "that in alypin we have an agent that may eventually become a serious rival to cocaine in eye work." Coming from so good an observer, this conclusion must be given due weight, though only the future and the repeated observations of other surgeons along the same line can give the drug its true status in our therapeutic armamentarium.—Lancet-Clinic.

**A Sign of Death.**—Dr. Ott, of Lillebournne (quoted in Illinois Medical Bulletin), has simplified Marteno's technic and found the test reliable. The flame of a candle or of a match is held so as to touch the skin on the anterior aspect of the forearm. In a few seconds a dry air blister forms and bursts if the subject is dead; otherwise an ordinary blister enclosing serum is produced.—Denver Med. Times.

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## EDITORIAL.

### WHAT IS THE ATTITUDE OF MEDICAL COLLEGES TOWARDS A HIGH STANDARD OF MEDICAL EDUCATION?

If the Chairman of the Council on Medical Education of the American Medical Association, Dr. Bevan of Chicago, voiced the sentiment of the Council in his address which was given at the meeting of the Council, in Chicago, May 12, 1906, we may infer that it was their belief that medical colleges were not in sympathy with raising the standard of education and that whatever was to be accomplished in this manner must be done by the enactment of such regulations to practice medicine as would compel medical colleges to conform to certain prescribed requirements for teaching. After attending a course of instruction which was recommended for adoption by medical colleges, Dr. Bevan said, "The purpose of the Council during the past year has been, and shall continue to be until accomplished, the securing of the general adoption of the standards

now recommended. In order to obtain the general adoption of these basic principles the co-operation of the State Licensing Boards and the State Medical Societies must be secured." No reference is made to medical colleges except to give the standing of their graduates in State Board examinations. In view of the fact that the Association of American Medical Colleges was formed many years ago, that the purpose of the Association has been to raise the standard of medical education, and to secure a more uniform standard of medical teaching, and that the Association recommended a course of study several years ago which has been very largely adopted by medical colleges, and that the course recommended by the Association of American Medical Colleges over two years ago was exactly the same as that recommended by the Council on Medical Education this year, it would seem that the medical colleges had taken the initiative in raising the standard of medical education and were heartily in sympathy with it and willing to meet any reasonable conditions. It is probably true that there are medical schools whose standard of education has been kept low for financial reasons, but these are the exception. A large majority of the medical colleges are working honestly and earnestly to bring about a highly satisfactory standard of medical education.

Anyone who reads the daily papers must be convinced that there is something radically wrong with the dogs this summer, whether it be genuine hydrophobia as reported, or something else. There seems to have been more than the usual number of mad dog scares, and in several cases the diagnosis of rabbies has been confirmed by post-mortem examination. This malady is one of the rare ones which the physician is called upon to remember, and it is a good plan to refresh one's memory occasionally on such things. Hydrophobia is as unique and interesting a disease as one could care to study. It bears all the evidences of



being an infection, but the etiological factor has never been demonstrated, being probably ultra-microscopic, as material passed through bacterial filters remains infectious. Nevertheless, it was one of the first diseases treated by immunization with toxin, although the nature of this toxin is yet entirely unknown. The treatment is largely preventative, for if delayed until symptoms appear the prognosis is little affected. This renders the actual statistics of results very uncertain, but the Pasteur treatment, although one of the most maligned, is probably one of the greatest discoveries the world has ever seen.

The difficulty met with in securing a few hundred dollars for the support of a district nurse in Burlington shows conclusively that the people of this vicinity do not appreciate their needs in such matters. The doctor who visits poor families knows how valuable to charity such an investment proves. Every district of any considerable size should have an appropriation for hiring a nurse to attend the poor. The starting of such a movement is worthy of the effort of any physician and we hope not only that the object referred to may succeed, but that other places may be provided for.

Owing to a tie-up in the printing office, this number is delayed. But as a compensation to our readers, we call attention to the fact that this issue, being necessarily set in a smaller type contains much more material than usual, probably the record for this paper. With the September issue, which will contain some exceptionally interesting features, we hope to have our difficulties again settled and appear with the usual promptness.

**How to Make Castor Oil Palatable.**—An approved method is to mix with an equal volume of glycerine, then flavor with a drop of oil of peppermint, anise or cinnamon.—Denver Med. Times.

## NEWS AND PERSONAL ITEMS.

*We desire to make this column of personal interest to all. Physicians are requested to send news items.*

### VERMONT.

Dr. C. E. Buchanan, University of Vermont, College of Medicine, 1906, has bought the practice of Dr. H. V. Hubbard in Barnard.

Dr. C. B. Dunn of Winooski has arranged to spend part of his time as assistant physician at Dr. Prime's sanitarium in Burlington.

Dr. H. H. McIntyre, who until recently practiced at Randolph, died suddenly at his summer camp at Barnard Aug. 12. He was graduated from the Georgetown Medical College at Washington and later took a course in osteopathy.

The next regular meeting of the White River Medical Association will be held at the Junction House, White River Junction, Tuesday, Aug. 21, at 2 p. m. The programme includes a paper on "Gastro-enteritis," by Dr. I. N. Fowler, discussion led by President Smith, and one on "Puerperal Septicemia," by Dr. C. M. Campbell, discussion opened by Dr. E. J. Fish.

The office of Dr. W. S. Nay, secretary of the Vermont State Board of Registration, was burned out in the Underhill fire of Aug. 12, but fortunately all his office furnishings and papers were saved without injury. The State records were saved entire, the only State property burned being the cartons for mailing registration certificates. This may cause some delay in sending out the certificates for the last examination, but otherwise there will be no inconvenience.

Dr. Elmer Beecher died July 20 at the home of his daughter, death being due to a general breaking down of the system incidental to old age. He was in the 96th year of his age, having been born in Hinesburgh, June 10, 1810, being a son of Lyman Beecher of that town. He attended the common schools of his native town and after teaching at Poughkeepsie, N. Y., pursued a course in medicine in the Castleton medical school. Subsequently he practiced in Shelburne for three years, when he returned to Hinesburgh to assume the management of his father's farm, relinquishing medicine at that time. Dr. Beecher was State senator from Chittenden county in the 60's and was for many years clerk of the town of Hinesburgh.

## NEW YORK.

Dr. Godfrey R. Martine, a veteran physician of Glens Falls, was instantly killed Aug. 8, by an electric express car. He had been making a professional call and evidently mistook the express for a passenger car, and attempted to hail it. Standing too close to the track, he was struck and hurled into the ditch, and life was almost extinct when the train crew reached him. Dr. Martine was born in Troy in 1837, and graduated from the medical department of the University of Vermont in 1862. He had practiced in Glens Falls since 1882.

## NEW HAMPSHIRE.

Dr. Eugene F. McQuesten of Nashua, the oldest physician in point of continuous practice, in that city, died July 18 at Squirrel Island, Me., where he had gone in the hope of recuperating his health. Dr. McQuesten was a native of Litchfield, where he was born on Oct. 11, 1842. He received his early education in the public schools of Nashua, being graduated from the high school in 1860. He attended Blanchard Academy, Pembroke, two years and then entered the scientific department of Dartmouth College. Two years later he began the study of medicine with Dr. Josiah G. Graves of Nashua. He attended a course of lectures at Dartmouth, and two courses at the Jefferson Medical College, receiving the degree of M. D. at the latter institution on March 20, 1866. In 1872 and in 1892 he took full lecture courses at the Jefferson College. After a few months' practice in Lynn, Mass., he began his Nashua practice on Jan. 1, 1887. He was city physician in 1871, secretary of the board of education in 1871-72, representative to the legislature from ward two in 1873-74, and secretary of the board of pension examiners from 1893-1897. Dr. McQuesten was especially noted as a surgeon, and was also frequently called as an expert witness, having figured in such capacity in nearly all the important criminal and accident cases in the State for some years.

Dr. Julia Wallace Russell, widow of Waldo P. Russell, died July 1, after a short illness. She was about 63 years of age and for many years a most prominent woman physician in this State. Dr. Russell was the prime mover in the New Hampshire Memorial Hospital for women and children, and in the last few years of her life gave much of her time to that institution. She was also a leader in the New Hampshire Memorial Hospital Association.

AN EPITOME OF  
CURRENT MEDICAL LITERATURE.

## MEDICAL EDUCATION.

## CORRELATION OF MEDICAL TEACHING.

F. F. WESTBROOK (*Journal of Minn. State Medical Ass'n*), discusses this subject with special reference to the University of Minnesota. In the "concentration" method used in Minnesota the year is divided into two semesters and each semester into two equal parts. During the first year the whole of the first semester is equally divided between anatomy on the one hand and histology and embryology on the other, and the second semester is divided between physiology and chemistry. In the second year the first semester is divided between therapeutics, physiology and chemistry, and the first half of the second semester is given to anatomy and histology and embryology, the second half of the semester being devoted to general bacteriology and pathology. The method of operation may be illustrated by stating that the student in the first semester of his freshman year spends a half of each day in the anatomic laboratory and the other half in the laboratory of histology and embryology. The same arrangement obtains in the second semester for chemistry and physiology. Formal lectures are largely replaced by laboratory talks based upon the student's practical work and given as the need arises. In the last two years of a four-year course, when fully equipped with general principles and technical methods, both third and fourth year students might well take up the work together, since the full two years would probably be necessary in order to cover all of the more common diseases. A single group of diseases or infection should be taken up at a time from the standpoint of etiology. When of bacterial origin, the bacteriology of the disease should be thoroughly inculcated, and the practical experimental work of the student supplemented by demonstrations. When infection depends upon hematozoa or other animal parasites, the same method can be employed. The pathology of these diseases and a thorough study of all of the tissues and organs of the body should be made at this time, so that the relationship of the local lesions, both gross and microscopic, to the general infection or disease process may be defined and understood. The main difficulties which such a plan suggests are the facts that one particular department may have a tremendous amount of work thrust upon it for a given period of time and for some time thereafter have little to do, while other phases of the particular subject are being presented by other teachers. Such time can be utilized in preparation for the next installment of work. Difficulties, too, in securing clinical material for illustration and study may be encountered, but these can be met by proper systematization.

## MEDICAL SUBJECTS IN LITERARY COLLEGES.

FREDERICK S. LEE (*N. Y. Med. Journal*, May 5), discusses the question of teaching medical subjects in literary colleges. It is my personal conviction, he states, in the matter under discussion, that it is hardly possible for medical subjects to be taught efficiently in a literary school. In explaining this position, I hope to justify my reasons for approving the general principle that the medical schools should not allow credit for work performed outside of their own walls. My first general argument is based on



the fact that the object of training given by the college is fundamentally different from that given by the medical school, and this difference connotes a difference in method. The difference in object is that which always exists between the general and the special. We send our boys to college to develop them intellectually, physically and morally, to give them the culture that the well-bred man of today is expected to possess. We send our boys to the medical school that they may acquire an exact knowledge, morphological and physiological, of the human body in health and disease. The four years of medical study present a light task for no one. Undergraduate days in the college may have been full of ease; the days of the medical student are never free from constant and hard labor. My second general argument in the proposition is based upon the nature of the subject matter that should be offered the student of medicine. For purposes of medical instruction these sciences should be considered as applied sciences. The idea should constantly be held before the medical student that medicine is an applied science. Anatomy affords a striking example of the characteristic method of instruction of the medical school. I venture to predict that no member of this conference is acquainted with a course in human osteology given in a college of arts and sciences from which a student comes so well equipped in any degree as the average medical student at the end of his anatomical instruction. It thus appears to me that sufficient general and special arguments exist for the taking of the stand by American medical schools and by this association that except in occasional specific instances and for unusually cogent reasons, no credit shall be allowed by the medical schools for work done in strictly medical subjects in the literary colleges. The medical school is the proper place for medical instruction. We should keep the latter within our own hands. If it needs improvement, let the remedies be applied by us. The medical course, now that we have extended it to four years, should not be encroached upon by pressure from without or within.

#### THE STUDENT'S POINT OF VIEW.

FREDERICK VAN BEUREN, JR., (*Am. Medicine*, March 10), writes regarding the rational presentation of subject in didactic lectures from a student's point of view. The field of usefulness of the didactic lecturer is, if not large, at least very important. The spirit of his speech and the intention of his work have a deep and lasting influence upon his hearers. He should be the leading spirit, the guiding hand, the pointing finger. It is in his power to lay the corner-stone of the foundation, to set the keystone to the arch. Knowledge of his subject, experience, some originality, a recognized scientific or professional standing, are the main characteristics required by his electors, of a man chosen to head a department. Students demand more than this of the man they have to learn from. They ask that he be interesting. They want him not only to possess knowledge, but to be able to impart it to them in some such form as they can readily assimilate. They need tools that they can use. From his first two years' floundering in the sea of knowledge the student has learned how little he knows and how much there is to be known and he has begun to recognize the unfortunate fact that he has never been taught to think. He has a lot of blocks and wants to be told how to put them together and build something out of them.

## SANITORIUM AND HOSPITAL.

### STATE SANATORIA FOR TUBERCULOSIS.

After noticing the great extension of late years of the ideas of the open-air and sanatorium treatment of tuberculosis, Dr. V. Y. Bowditch, Boston (*Journal A. M. A.*, Aug. 4), utters a word of caution against too ill-regulated enthusiasm. The fresh air treatment can be carried to extremes and made cruel and dangerous to advanced cases. Sanatoria, in the strict sense of the word, should in his opinion be located at a distance from large cities and be used only for incipient cases, should not be too large, and should be kept above the level of mere boarding-houses with medical attendance. For advanced cases another sort of institution should be supplied, near the great centers of population where the inmates can have the privilege of seeing their friends without great loss of time or expense. State sanatoria should be centers of scientific research where clinical observation can go hand in hand with laboratory investigation, and he offers the Trudeau sanitarium and laboratory at Saranac Lake as an example and an ideal.

### THE HOSPITAL PROBLEM.

BAYARD HOLMES, Chicago, points out what he considers some defects in the hospitals of this country and their management. Having been founded largely from charitable motives, to relieve suffering rather than to restore to health and usefulness, they lack those post-operative gymnastics and hydropathic methods that form so large a part of the treatment in the hospitals of Europe. Our hospital trustees are supreme and the medical staff are their underlings and it is often impossible for the hospital staff to secure what in their best judgment is essential for the good working of the institution. The use of hospital positions unduly for personal benefit is also criticised, the lack of other remuneration, the hampering of clinical work and of the utilization of the hospitals for instruction, the use of the hospital for the personal aggrandizement of some one overshadowing member of the staff, are all included in the indictment. The hospitals, he states, should be a part of the armamentarium of the profession and it should control them.

## MEDICINE.

### MULTIPLE NEURITIS.

D. I. WOLFSTEIN, Cincinnati (*Journal A. M. A.*, Dec. 9), gives reports of four cases of multiple neuritis illustrating the main etiologic types; i. e., those due to toxic agents, such as alcohol, mercury and lead; those due to acute infections; those connected with general diseased conditions of the body, such as rheumatism, diabetes and syphilis; and last, cases due to exposure to cold or developing apparently without determinable cause. He remarks on some points in the differential diagnosis, such as the involvement of motor fibers, the symmetrical character of the paralysis, the usually simultaneous affection of the legs and forearms, usually not extending to the thighs and upper arms and never except in fatal cases involving the abdominal and respiratory muscles. The prognosis, save in the acute grave cases, is relatively good. In patients with chronic alcohol or lead intoxications, with impaired constitutions, we can hope for only a partial recovery if any. Rest and appropriate nutrition are

the principal indications in treatment. In the early stages the salicylates are useful. Light wrappings and soothing applications for the hyperesthesia are also of use. Special causal affections and intoxications, of course, call for appropriate treatment. Judgment is needed in case of alcoholism as to the continuance or withdrawal of the stimulant. With chronic cases strychnia, arsenic, gentle massage, and the galvanic current may be useful in aiding repair of the nerve and in keeping up the nutrition of the muscles.

#### PNEUMONIA WITH MENINGITIS.

W. H. ANTELL, Bellingham, Wash. (*Journal A. M. A.*, March 3), reports a case of acute lobar pneumonia with pleurisy, running a typical course with crisis on the eighth day, but complicated with meningitis. This appeared first on the third day with severe frontal headache and some stiffness of the nuchal muscles and violent delirium, highest at the crisis of the disease. All the symptoms, however, disappeared under simple supporting treatment with ice caps to the head and cool sponging to reduce temperature. The patient was discharged fully convalescent on the twenty-first day; there have been no later mental symptoms. The special points of interest noted in the case are the absence of any cardiac symptoms and typical course of the lung disorder which was unaffected by the meningitis.

#### ACUTE ARTICULAR RHEUMATISM.

C. W. HARGENS, Hot Springs, S. D. (*Journal A. M. A.*, March 3), remarks on the confusion in the common use of the term rheumatism, which he defines as an acute, febrile, non-contagious affection, characterized by a nomadic multiple arthritis, profuse sweating and proneness to endocardial complications. He is not inclined to accept the microbic theory of the disease, which he considers to be, in at least the great majority of cases, autotoxic, due to toxic invasion from the alimentary canal, but often complicated by microbic invasion, the infection being secondary to the conditions wrought by the disturbed metabolism and made possible by them. Realizing this, early treatment, he says, will promptly relieve the patient and will usually prevent the secondary infection. His treatment consists in complete rest between dry blankets in a warm sunshiny room, thorough cleansing of the alimentary canal before any food is allowed, then a carefully regulated diet, limiting the food taken and excluding all proteid or xanthin-forming foods, keeping up elimination vigorously by way of the skin and bowels with baths; laxatives, etc., and flooding the system by the internal administration of alkaline waters and keeping the urine alkaline or neutral by this means. For drug treatment, he would give the salicylates, not over three drams daily, in doses of from ten to fifteen grains. He finds that with hot baths and free elimination, large doses of depressing drugs are well borne, but he advises getting rid of the salicylate as soon as possible and substituting the syrup of iodid of iron and Fowler's solution, as these patients become weak and often markedly anemic. Also, he says, one must not adhere too long to the non-proteid diet. Locally he uses hot fomentations to the affected joints or keeps them wrapped in cotton batting or wool and applies a splint. Unless the weather is extremely favorable he would keep the patient in bed

at least a week after the temperature becomes normal, and in all cases he keeps careful watch against relapse.

### REPORTS OF CASES.

*Presented at Clinical Society of the New York Poly-clinic Medical School and Hospital.*

#### ATRESIA OF THE BOWEL.

Dr. J. E. Fuld showed this specimen. The child was born normally, at full term, and on the morning of the third day vomited material which looked like meconium. It had not defecated since birth, and refused the breast. Physical examination showed a well-formed, healthy baby, with no outward deformities. The abdomen presented marked lateral and median distention, but no signs of hernia. Examination with a large sized Kelly systoscope showed a distinct narrowing of the lumen of the bowel between  $1\frac{1}{2}$  and  $1\frac{3}{4}$  inches from the anus. In the centre of the narrowest part a small dimple was distinctly visible, and through this a uterine sound was introduced with some difficulty for about  $1\frac{1}{4}$  inches. No mass could be felt in the pelvis. A diagnosis of atresia recti was made, and ileostomy was performed under chloroform anesthesia. A median incision two inches long was made below the umbilicus, and in trying to get into the peritoneal cavity the much distended bladder, which resembled the parietal peritoneum, was nicked and considerable urine escaped. An artificial anus was made in the lowest part of the ileum, which was packed off and surrounded with gauze. The patient left the table in a fair condition, but was not relieved by the operation, and died 13 hours later.

Post-mortem examination showed the small intestine to be full of meconium and considerably distended. The pylorus was distinctly thickened for a distance of about three-fourths of an inch, making a firm ring, and producing a slight stenosis. Section through the thickened tissue showed very marked increase of the muscular layer. At the normal end of the ileum, instead of the normal valve there was complete closure. Beyond this the large bowel was patent throughout, communicating below with the rectum. In the centre of the septum was a dimple, corresponding to the ileo-cecal valve. The large bowel was the size of an adult uterus, and the cecum was about three-fourths of an inch in length and about twice the size of the sigmoid colon.



## SPONTANEOUS RUPTURE OF THE UTERUS DURING PREGNANCY.

Dr. L. J. Ladinski showed a uterus and adnexa which he had removed from a patient about a week before. The history given was that pregnancy followed four years after operation at the Polyclinic Hospital, and just prior to impregnation there was chronic endometritis with mattery discharge. Examination through the vagina during the fourth month of pregnancy showed the uterus to be adherent, but there was no deformity in size, form or position. Three days before operation a small blood spot was noticed, and the speaker advised absolute rest in bed and morphine. There was no further showing of blood, but the following day the patient complained of pain in her back, and two days later she collapsed. Her pulse was rapid and almost imperceptible at times, and she had intense pallor and rapid respiration. Her abdomen was distended, not in the shape of a dome, but over its entire surface. A diagnosis of ruptured abdominal pregnancy was made, and immediate operation advised. When the patient was placed on the operating table the fetus was found in its sac, floating about in the abdomen. There was a large rent in the uterus. The patient made a good recovery.

Uterine rupture during pregnancy is rare, and must not be confounded with rupture during labor. The most frequent cause for the former is the giving way of the scar of a previous Cesarean section, or of the connective tissue formed after a deep curettage. In the case described, one portion of the posterior wall of the uterus was as thin as paper. If a history of the operation performed four years before could be obtained it would assist in determining the cause of this condition.

Dr. B. Torrens said that possibly the patient was the same as one on whom he had operated about four years ago at the Polyclinic Hospital. On inserting the curette into the uterine cavity, it was found that the instrument entered the abdominal cavity through an opening in the anterior uterine wall. It was immediately withdrawn, and digital examination showed two perforations of the wall, with about one inch of connective tissue separating them. Each of the openings was large enough to admit the passage of two fingers. The uterus was packed with iodoform gauze, the cul-de-sac of Douglas was opened, and the small intestine was found adherent to the anterior uterine wall at the site of perforation. This was detached and the pelvis packed with gauze. The patient made an uneventful recovery.

Dr. R. H. M. Dawbarn said that this case reminded him of an instance in which he made a diagnosis of abdominal rupture of pregnancy, even going so far as to determine the position of the fetus. There was some bleeding from the uterus, which was enlarged and quite soft. The abdomen, when opened, allowed the escape of a very great amount of bloody material, and this being removed, it was seen that all of the viscera, the bowels especially, were covered with a new growth which proved to be sarcoma, the largest clump of which had been mistaken for the fetus.

## DERMOID CYST.

Dr. Dawbarn showed a dermoid cyst which he had removed a week previously from a girl nine years of age. The dermoid was much larger than the average specimen of its kind. There was a history of half a dozen paroxysms of pain, and when the specimen was removed the pedicle was found to be twisted upon itself a great many times. Apparently this had occurred coincidentally with the pain, and of course had occasioned hemorrhage of the sac. The solid portion of the cyst was about the size of a small egg and was filled with teeth and bones.

## TENDON TRANSPLANTATION IN THE FOREARM.

This patient was presented by Dr. J. A. Bodine. He was a butcher by trade, and was on the top of a high stepladder when he slipped and caught at a large meat hook on the side of the wall. The hook penetrated the forearm at the base of the thumb, picking up the three tendons on the radial side—the two tendons forming the anatomical snuff box and that of the supinator longus. He swung from this hook with his entire weight of 170 pounds. The tendons did not break, but pulled loose from their attachments to the muscles in the forearm, one of them hanging down for 12 inches. He wrapped his butcher apron around the forearm and tendons and in a few hours was on the operating table. The tendons were identified and two of them passed through the canal in the anterior ligament of the wrist and sutured in their proper positions. The loose tendon of the supinator longus, however, was so long that opening of the muscular planes of the forearm, near the elbow, would have been necessary in order to stitch it in place. It was therefore thought best to transplant it into the tendons of the extensor primi interodii pollicis. The wound healed kindly and the patient can now do with his thumb all that he can do with the other one.

## VARICOSE VEINS OF THE LOWER LIMB.

The patient was also presented by Dr. Boudine. Of middle life, she presented for operation the worst type of this condition. Great masses of infected thrombi were present on the inner side of the leg. Three weeks' rest in bed, with ice bags, etc., was insisted upon, until all inflammation and sepsis had disappeared. She was then operated upon. It is the speaker's belief that when the Trendelenberg operation cannot be utilized the only other to be recommended is that of excision of the entire internal saphenous vein, because if the blood current in the vein is cut off by any other operation, the walls of the useless vein may become a foreign body and require removal. The operation recommended by the speaker is that of Caseta in which the entire vein is removed through three or four small cuts in the overlying skin, the vein being pulled out subcutaneously, the numerous tributary vessels being torn across, but not ligated. At the junction of the middle with the lower third of the leg, the skin and subcutaneous fascia are then cut through to the muscles, the cut encircling the entire limb. After this operation the patient is usually in the hospital for two weeks. In every one of the twenty cases in which the speaker had operated according to this method the cure had been perfect.

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### BOOK REVIEWS.

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INTERNATIONAL CLINICS, a quarterly of illustrated clinical lectures, and especially prepared original articles. Edited by A. O. J. Kelly, A. M., M. D., Vol. II, 16th Series. Published by J. B. Lippincott Co., Philadelphia.

This number of an always good series, seems unusually inviting in its contents. Selecting at random one department, treatment, the articles included are, "The Prognosis and Treatment of the Chronic Valvular Diseases of the Heart," by Delancey Rochester; "The Prevention and Treatment of Acute Nephritis," by James M. French; "The Treatment of Migraine with Special Reference to the Use of Cannabis Indica," by G. Carron de la Carriere; "The Prophylaxis of Nervous Disease, with Special Reference to Educational Influences in the Growing Child," by Philip Zenner. This is a fair sample of the make-up of the book.

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THE PRACTICE OF GYNECOLOGY in Original Contributions by American Authors. Edited by J. Wesley Bovée, M. D., Professor of Gynecology, George Washington University, Washington, D. C. Published by Lea Brothers & Co., Philadelphia.

A method now coming more into vogue of compiling a book from the contributions of several authors, each one writing upon the subject of his specialty or line of experience, is taken, advantage of in this this series, of which this book is the first which includes also Pediatrics and Obstetrics. The plan is without doubt a good one and the gynecology, which Dr. Bovée has edited will take its place among the best books on the subject. The editor has very properly included diseases of the rectum and anus, and the treatment of the gynecological matter is very complete. Many of the illustrations are the familiar ones from older works, but many original ones have been added, and are particularly good.

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THE PRACTICE OF PEDIATRICS, in Original Contributions by American and English Authors. Edited by Walter Lester Carr, A. M., M. D. Lea Brothers & Co.

This work on Diseases of Children is the second of three companion volumes on Gynecology, Pediatrics, and Obstetrics. Being written by well-known authors, both English and American, it presents the latest work in this branch. The chapters on Infant Feeding and on Diseases of the Heart are especially good. The work as a whole is very complete in Symptomatology and Treatment. It has been edited with care and will be a valuable addition to the library of the general practitioner.

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DISEASES OF THE NERVOUS SYSTEM RESULTING FROM ACCIDENT AND INJURY.

This book is unique in the arrangement and discussion of diseases of the nervous system. The differential diagnosis is clear, and the entire subject is treated in a most practical way. It cannot fail to be a most useful book for the general practitioner.

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MASSAGE IN INCIPIENT PHTHISIS.—Knopf directs to begin with a dry massage for several days, combined, if skin particularly dry, withunctions of cod-liver oil; next for same period, friction with pure alcohol, then with dilute alcohol and finally with water alone; then cold sponge bath, then affusion, and at last the douche. Friction with the hands directly in contact with skin or over a large towel, after the douche, should always be kept until patient is thoroughly dry and warm and skin is red where water has been applied.—*Denver Med. Times.*



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## ORIGINAL ARTICLES.

### PRIMARY PERNICIOUS ANEMIA.

By C. H. Beecher, M. D., Adjunct Professor of Theory and Practice of Medicine, University of Vermont, College of Medicine, Burlington, Vt.

The term Primary Pernicious Anemia is applied to that class of cases in which there exist none of the usual causes of anemia; or, as Addison said "A general anemia occurring without any discoverable cause whatever, cases in which there had been no previous loss of blood, no exhausting diarrhoea, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease."

This limitation of the term throws out of the category of Primary Pernicious Anemia those cases in which the etiology is known and retains only those cases in which the most thorough examination of the patient both clinically and post mortem fails to show any primary disease.

The disease is widely distributed, occurring mostly in middle-aged persons and more frequently in men than women.

#### ETIOLOGY.

Many theories have been advanced as to the causation of the disease, and there is considerable discussion as to whether the disease is due primarily to defective blood formation (hemogenesis) or to excessive blood destruction (hemolysis).

The adherents to the theory of defective hemogenesis claim a degenerative change, or reversion to the foetal type, of the bone marrow to constitute the pathology of the disease, affecting the formation of red cells so that fewer are formed, or what is more important, those cells formed being more vulnerable and more easily degenerated.

This theory of defective formation has been brought into question, first, by finding similar

changes in the marrow in chronic diseases causing cachexia malaria, cancer, tuberculosis, etc., and by its production experimentally by small repeated hemorrhages. These changes have, however, been claimed to be only an increase in functional activity and not a degenerative one.

Lately the theory has again been questioned by the report of cases of pernicious anemia in which the usual changes in the marrow were absent, but Ewing claims that this type of anemia can be distinguished by the blood examination, never showing the large red cells in the proportion that they are present in the cases with marrow changes; and has suggested the term "microcytic type" for these cases.

The evidence in favor of the disease being due primarily to excessive hemolysis is briefly: The granular degeneration of the red cells and the tendency to polychromatophilia a typical staining; the presence of pathological urobilin in the urine; the pigmentation of the skin; the excessive deposits of iron in the viscera, especially the liver; the production of a pernicious anemia which can not be distinguished clinically from the primary type by intestinal parasites, and by the use of certain blood solvents.

The cause of the excessive hemolysis has been assigned by Hunter to intestinal intoxication, oral sepsis, etc., the toxins produced causing the blood destruction.

Bacterial infection of the blood has been assigned as a cause.

Lately Stockman suggests that repeated small capillary hemorrhages play an important part in the causation of the disease.

Whatever the decision as to which is primary, the fact remains that in the majority of cases the two factors, defective formation and excessive destruction go hand in hand providing as it were a vicious circle which grows larger by the degenerations caused by the deficient nourishment of the tissues.

#### COURSE, PROGRESS AND DURATION.

The disease is rarely *progressive* in its course but is marked by remissions, during

which the symptoms are modified but in which the blood does not approach very nearly the normal, and following the remission, relapse is almost certain.

Of sixty cases reported by Shattuck and Cabot, fifty-two died within two years, and all within three years. There have been, however, instances reported in which recovery had apparently taken place, some of them being cases of most extreme reduction in the number of red cells. Naturally, however, the quality of the cells, that is as to their ability to perform their function, would be of primary importance and not the fact of the numerical reduction, although according to Ewing, a reduction to 700,000 red cells in this disease is seldom survived.

#### DIAGNOSIS.

The more important points in diagnosis are the extreme reduction of the number of red cells, high color index or relative increase in hemoglobin, great distortion of the red cells, an average increase in the size of the cells, nucleated red cells of large size and a normal number of leucocytes, together with the *absence* of signs and symptoms of disease which could stand in causative relation to the anemia.

From *chlorosis* it is usually easily distinguished, most cases of chlorosis occurring in girls at puberty. In the blood of chlorotics the hemoglobin is relatively reduced, the red cells never being reduced in number as in pernicious anemia, and rarely showing nucleated forms. Moreover chlorosis is practically always relieved and usually promptly cured by iron.

In *leukemia* the spleen, or the lymphatics, or both, are usually enlarged but the blood examination may be necessary to settle the diagnosis, showing the increase in leucocytes characteristic of that disease.

The *secondary anemias* are sometimes very hard to differentiate, the diagnosis resting usually on the finding of evidence of some primary lesion and the difference in the blood, being in the secondary anemia of a lower color index, higher red cell count, and, as a rule, showing an increased or at least a normal number of leucocytes.

#### TREATMENT.

Owing to the peculiar course of the disease, the remissions and relapses, the influence of

drugs is very uncertain. Arsenic probably takes first place in the list of the many therapeutic measures advised. In many cases it seems at least to stay the progress of the disease, and numbers of "cures," so-called, have been reported. Most of these "cures" lack either a sufficient length of time to justify the term or a careful blood examination which certainly is essential to the diagnosis.

On the ground of the disease being due to sepsis, or auto intoxication, intestinal antiseptics have been advised and lately much used. We however certainly lack an efficient one. Red bone marrow, oxygen, and massage all have their advocates. Iron seems useless. The latest addition to the armamentarium is the raw spinal cord of young cattle advised by Fabian. He reports a favorable result in one case.

#### CASE HISTORY.

This paper was prompted by the occurrence of an interesting and in some ways unusual case, which I have the privilege of reporting.

Male, 49 years of age, native of Canada. Had lived in this city for the last 34 years.

Married 29 years, father of twelve children, of whom nine are living, all being well and healthy. The others died in childhood, one at the age of three years from burns; one at three months from enlarged liver; and one only lived a day and a half, and is said to have died from hemorrhage of rectum. Three children were born after this last one died. His occupation was that of carpenter and cabinet maker. For the last thirty years he had worked indoors in the shops at his trade, except during the last two when he held a city position, but was still indoors much of the time. He never used alcohol, tobacco or narcotics habitually, or to excess. One brother died of Bright's disease, otherwise the family history is negative.

Had belonged to benefit organization for 32 years and had never drawn for illness up to the beginning of his last sickness two years ago. The only sickness of which he could remember, outside of the diseases of childhood, was 25 years ago when he had chills, and was said by his physician to be threatened with malaria. He felt sick for a week at that time but did not stop work at all.

Four years ago he was interested in a political campaign and did considerable work. He



got very tired, both physically and mentally, and said he never felt as well afterward, although he worked as usual. In August, 1901, he had a slight attack of bronchitis which was epidemic at that time. He recovered from the cough but felt weak. Later in the fall he grew weaker, lost some flesh, grew pale, appetite got poor and had much breathlessness on exertion, with some cardiac palpitation. He was treated for Bright's Disease, on account of his pallor, but grew worse steadily.

He came under my observation April 10, 1902. On examination at that time complained of feeling weak and tired, breathlessness on exertion and loss of appetite but no pain of any kind. Looked sick, but in fair flesh. Skin showed slight yellowish tint of very even distribution. The conjunctivae were clear and of a pearly white color and the mucous membranes generally were extremely pale. Lungs normal. Heart normal as to size and position. On auscultation, a systolic murmur was heard, loudest at base, and also heard well over lower carotids. Pulse was 84, full, regular but of slight tension. No arterial thickening to be detected. Tongue pale, smooth and uncoated. No tenderness or tumor of abdomen. Liver and spleen of normal size.

Urinalysis April 11, 1902, 32 oz. in 24 hours. Sp. gr. 1018, acid reaction, clear, reddish yellow color which was due to pathological urobilin. Urinous odor. Chemically, no albumen, sugar, bile, or blood. Urea 6 gr. to oz., 210 gr. in 24 hours. Microscopically, a few large granular casts, a few leucocytes, and a few sq. epithelial cells. It was examined again the 19th, the only difference being an increase in the amount of urea to 350 grs. in the 24 hours.

The blood was examined by Dr. B. H. Stone, April 11, 1902. Reported as follows: Gross appearance—streaky and abnormally fluid.

Quantitative—Erythrocytes . . . . . 1,592,000  
 Leucocytes . . . . . 7,840  
 Hemoglobin . . . . . 50%  
 Qualitative—Erythrocytes: Megaloblasts,  
 Megalocytes, Microcytes,  
 Poikilocytes,  
 Leucocytes: Polynuclear Neutro-  
 philes . . . . . 80½%  
 Small Lymphocytes . . 12½%

Large Lymphocytes . . 6½%  
 Eosinophiles . . . . . ½%

From the result of the blood examination showing as it did a relative increase in hemoglobin, a marked diminution in number of red cells, nucleated red cells, many large red cells, marked changes in shape of the cells and no leucocytosis, together with the absence of positive symptoms of other lesions, a diagnosis of pernicious anemia was made.

He was given digestives, red bone marrow, and arsenic. The arsenic was given as Fowler's Solution in increasing doses until physiological effect was produced and then gradually diminished and stopped and repeated after an interval of a week. After the first week of treatment he improved in color and strength but not in weight.

After continuing the arsenic intermittently for about three months he became so susceptible that he was unable to take more than 7m. at a dose on account of a severe dermatitis which it caused. His hands and feet peeled entirely on two occasions, and after stopping the arsenic, were tender and red with tingling and numbness for some time. In place of the Fowler solution he was given arsenious acid in tonic doses and also Blaud's Mass. He was able to do some light work during the summer but as colder weather came on he began to grow weak and pale, and his appetite, which had been very good, diminished.

Monday, Dec. 1, 1902, he had chilly sensations between four and five o'clock in the afternoon while at his office. After some drinks he felt feverish and between twelve and one that night sweat some. This attack was repeated with regularity, as to time, for four days. When seen Thursday evening, Dec. 4, between six and seven o'clock, he had passed the feeling of chilliness and felt feverish. Had a temperature of 104 and pulse of 120; felt some nausea but did not vomit; had no pain of any kind.

The blood was examined at the State Laboratory twice for plasmodium malariae but none were found.

He was given grain doses of quinine three times a day; and the iron, arsenic and digestive continued. The quinine was continued for three or four days, during which time he had no further trouble of like character and it did not return.

He continued to grow weaker, complaining especially of his legs being weak and numb, with tingling and creepy sensations. These symptoms he attributed to the "drop medicine" (arsenic) which he taken in the summer and early fall.

On Jan. 21, 1903, he had failed so appreciably and had so much trouble with his legs that he was put to bed. The disturbances of sensation had progressed so that the lower part of his abdomen was involved and he complained of a sense of constriction of the abdomen. At this time he had increased patellar reflexes and the Babinski's reflex was present. He complained of the legs feeling stiff, and there was some spastic condition. At this time also his tongue bothered him considerably and was red and superficially ulcerated at the edges and tip. Repeated cultures examined by Dr. Stone showed almost pure culture of the staphylococcus pyogenes aureus. This condition improved most under treatment with potassium chlorate solution but was present at times for the next six months. It had never to his knowledge existed before.

A blood examination made by Dr. Stone Feb. 5, 1903, was as follows: In general, perceptible decrease in color and increase in fluidity.

Quantitative: Erythrocytes ... 1,616,000  
Leucocytes ... 1,576  
Hemoglobin .. 40%

Qualitative: (a) Erythrocytes:  
Many Megalocytes, microcytes and poikilocytes.  
(b) Leucocytes:  
Polynuclear ..... 66%  
Small Lymphocytes ..... 30%  
Large Lymphocytes, 3%  
Eosinophiles .. 1%

The urinalysis was: Quantity in 24 hours 20 oz., sp. gr. 1024, reaction acid, color yellow, sl. cloudy with diffuse sediment. Showed chemically a trace of albumen, 11 grs. urea to oz., 220 grs. in 24 hours. Microscopically a few leucocytes and epithelial cells, no casts.

He failed gradually in strength, grew irritable and peevish, restless at times; but usually sleepy, dozing a great deal of the time. When awakened had considerable mental confusion as to places and attendants and loss of perception of time. He also had transient at-

tacks of aphasia. At times had some delirium, especially at night, mostly of typhoid type but occasionally active. Had several attacks of fainting and was in coma for three days—March 14-16. Had at all times considerable air hunger, or sighing respiration, which was occasionally of the cheyne-stokes variety. His appetite was lost, had some nausea but no vomiting. His temperature varied only slightly from 101 at all times, pulse 84, full and regular, tension slight.

A blood examination March 13, 1903, by Dr. Stone follows: General, blood very watery in appearance.

Quantitative: Erythrocytes .. 718,720  
Leucocytes ..... 5,000  
Hemoglobin .. 10%

Qualitative: Erythrocytes: Many megalocytes, microcytes and poikilocytes, few megaloblasts.

Leucocytes: Polynuclear ..... 76%  
Small Lymphocytes ... 12%  
Large Lymphocytes ... 8%  
Transitional Lymphocytes, 2%  
Eosinophiles .... 2%

Urinalysis March 13, 1903: Quantity in 24 hours 45 oz., sp. gr. 1010, reaction acid, color yellow, clear. Chemically a trace of albumen, urea 8 gr. to oz., 360 gr. in 24 hours. Microscopically a few small coarsely granular casts, a few leucocytes and sq. epithelial cells.

During the previous seven weeks he had been given intestinal antiseptics including salol, bismuth-beta-naphthol and the sulphocarbolates; also arsenic as the sulphuret (red) and strychnine, in tonic doses. About a week after the preceding blood test, and while the only drug he was taking was strychnine, he began to improve. His appetite became good, at times ravenous, bowels were regular and he slept well. He improved steadily in strength, and his legs felt better, so much so that in three weeks from the time he began to improve he was about the house. His weight increased about ten pounds in the next few weeks and he felt very comfortable.

A blood examination May 14, 1903, by Dr. Stone was as follows:

Quantitative: Erythrocytes .. 2,483,200  
Leucocytes ..... 4,200  
Hemoglobin .. 47%

Qualitative: Erythrocytes: Many microcytes and poikilocytes, few



megalocytes, numerous cells which are apparently undergoing degeneration.

Leucocytes: Polynuclear, 50%  
 Small Lymphocytes ... 42%  
 Large Lymphocytes .... 7%  
 Eosinophiles .... 1%

Urinalysis May 14, 1903: Quantity in 24 hours 60 oz., sp. gr. 1.012, acid, yellow color, clear. Chemically, no albumen sugar, blood or bile, urea 2 gr. to oz., 120 grs. in 24 hours. Microscopically, a few granular casts of large size, a few leucocytes and sq. epithelial cells.

After getting about he had ulcerative balanitis and phimosis, due to the irritation caused by an accumulation of smegma while in the low condition. It yielded readily to treatment. About the only other complaint made for the next two months was about his legs being stiff and weak, and of some slight pains, with numbness and tingling. On examination at different times they were found atrophied considerable and still spastic, the knee jerks being increased, Babinski's reflex present, ankle clonus of left leg, but not of right, small areas of anesthesia, and the tactile sensation of legs generally diminished. Romberg's symptom was present, and there was also considerable ataxia. The pupils reacted to light and distance. No mental disturbance.

He had so much trouble with the spastic condition and failed so much in strength that he took the bed again July 25, 1903. The trouble with the legs gradually increased so that at times clonic spasms of the rectus femoris would result from a tap on the patella tendon. The ankle clonus became more marked in the left leg but was never present in the right. The pains he had felt in the legs became higher, and later was principally in abdominal and chest walls.

Appetite was very poor, tongue at this time not ulcerated. Had several attacks of diarrhoea which were very obstinate, yielding only to opiates. These attacks alternated with periods of constipation, although the stools were never hard. The abdomen was moderately tympanitic and occasionally tender on pressure.

The stools were examined several times after Aug. 1, 1903. Fresh water algae and round worms were found. The worms were microscopical, 3.4 mm. in length, 10½ mm. wide with slender body tapering toward the

ends, the anterior end being the blunter. They were transparent, and except for the lining of the alimentary tract, hyaline. The esophagus was straight and except anteriorly there was no dilatation of it, the anterior dilatation being evidently the oral cavity. The esophagus was not to be distinguished in structure from the intestine which opened about one fourth of the distance from the posterior extremity. They were non-motile when observed. They correspond to the description given by Price—Journal A. M. A., Sept. 19, 1903, of the rhabditiform embryo of the *Strongyloides Intestinalis*. The worms were very abundant in the first two examinations but later there were found only a few, and still later, none.

In all the stools there were quantities of black specks which resembled grains of pepper in microscopical appearance. Under the microscope they appeared homogeneous and of a reddish brown color. They did not respond to the hematin test.

Shortly after taking the bed he lost control of the rectal sphincters and had incontinence of feces. While constipated he had some trouble with hemorrhoids, but only during the latter part of his illness, and then they bled but little. After his feces became incontinent the piles did not trouble him.

The systolic murmur present was now very loud, heard both at the base and apex of the heart, and even over the carotids, brachials and femorals and to the left axilla; was never able to find capillary or venous pulsation. Over the juglar vein a marked thrill was to be felt. The heart's action became more feeble, and oedema of the lower extremities began to appear.

A blood examination Aug. 7, 1903, by Dr. Stone was; General, increase in fluidity, deficiency of color, streaked appearance.

Quantitative: Erythrocytes ... 1,089,600  
 Leucocytes ..... 5,600  
 Hemoglobin .. .... 35%

Qualitative: Erythrocytes: Microcytes, megalocytes and poikilocytes. Many degenerating cells.

Leucocytes: Polynuclear, 55%  
 Small lymphocytes ..... 22%  
 Large lymphocytes ..... 21%  
 Eosinophiles .... 1%  
 Mast cells ..... 1%

Urinalysis, Aug. 7, 1903: Amount in 24

hours 40 oz., sp. gr. 1020, acid, reddish yellow color, due to pathological urobilin, clear. Chemically, negative, urea 8 gr. to oz., 320 grs. in 24 hours. Microscopically, hyaline and granular casts of large size. A few leucocytes and a few epithelial cells.

He gradually grew weaker, memory failed very appreciably, had hallucinations of sight and hearing at times, and during the last week was delirious, his delirium being of the active variety. He evidently had considerable pain in chest and abdominal walls, with cramp like attacks in the muscles. His answers to questions were so unintelligible, that the point as to the amount of pain was hard to determine; anyway it required large doses of opiates to quiet him. He finally lost control of the bladder sphincter and had urinary incontinence. During the last week his patellar reflexes were very much diminished, Babinski's reflex and ankle clonus absent, and almost no power in legs and no control of them. The cadaveric odor of the body noted by some observers was present the last two or three days. His heart gradually failed, being rapid and feeble, and during the last twenty-four hours had some pulmonary oedema. He died in coma Sept. 24, 1903.

A blood examination twenty-four hours before his death, Sept. 23, 1903, by Dr. Stone, was as follows: General, Increase in fluidity, diminution in color.

Quantitative: Erythrocytes . . . . . 649,600  
 Leucocytes . . . . . 3,400  
 Hemoglobin . . . . . 10%

Qualitative: Erythrocytes: Many degenerated cells showing extrusions, microcytes, megalocytes and poikilocytes.  
 Leucocytes: Polynuclear, 67%  
 Small lymphocytes . . . . . 30%  
 Large lymphocytes . . . . . 3%  
 A few myelocytes were present.

#### AUTOPSY.

Ten hours' post-mortem: The back and buttocks showed some post-mortem lividity. No hemorrhages were noted in the skin or in the serous membranes. The skin showed a light lemon tint. The hair was soft and had become thin and grey. Edema of the extremities was present. The body was markedly emaciated which apparently was due to mus-

cular atrophy, as the subcutaneous fat was fairly well preserved and of a light yellow color. The muscles were of a brighter red than the internal organs which were extremely pale. The muscles, however, were not a brighter red than normal, contrary to many reported cases.

The pericardium contained two ounces of serous fluid of a light yellow color. The heart was normal in size, wall normal in thickness and of a uniform yellowish brown color. No yellow spots or striations were seen. The only blood present in the heart was a large apparently ante-mortem clot in the right heart extending through the tricuspid opening. The valves and openings were normal, no atheroma being found and no apparent degeneration of any kind being present. Microscopically the muscle was normal in structure. In some areas there was a deposit of iron pigment which was in and between the muscle fibres.

There was a small amount (one or two ounces) of clear serous fluid of a light yellow color in the right pleural cavity. The lungs were slightly edematous and there was some hypostatic congestion at the bases. Otherwise they were normal. The peritoneal cavity contained no fluid. The stomach was normal in size, pale in color and moderately full of fluid, it evidently being what had been taken during the last hours of life. The internal surface was smooth, pale and shiny, the rugae being only faintly apparent. The pylorus was of normal size and patent. Microscopically the mucous membrane was apparently normal, the glandular tissue staining well.

The intestine showed microscopically about the same changes as the stomach. We were unable to find any round worms in the intestine, although prolonged search was made.

The spleen was normal in size and color, but unusually friable. Microscopically normal. There were some areas of iron pigmentation found in which the pigment was deposited in the stroma.

The liver was normal in size. On section was yellowish brown in color. Histologically the structure was normal. Sections showed very marked increased deposit of (hemosiderin) iron pigment especially in the outer two-thirds of the lobules, the deposit being in the cells.

The gall bladder was distended and contained 5 oz. of thick bile. The biliary ducts were



all patent but the cystic seemed rather smaller than usual.

The pancreas seemed normal macroscopically, but cut with more resistance than usual. The microscopical examination showed an increase, not very marked, in the interlobular connective tissue, some of which was very recent showing blood vessels in the state of formation. The glandular tissue was normal in structure. Some iron was present, being in the cells.

The right kidney was normal except for the presence of two small cysts about the size of a pea just beneath the capsule. The left kidney was normal in size, capsule slightly adherent, markings poorly defined, and appeared congested and red. Microscopically there was some parenchymatous degeneration of the epithelial cells of the tubules and some slight increase in the intertubular connective tissue. The cells of Bowman's capsule and of the Malpighian tufts were normal. There was some iron found in this kidney, it being both in the epithelial cells and in the connective tissue. The supra renal capsules were normal.

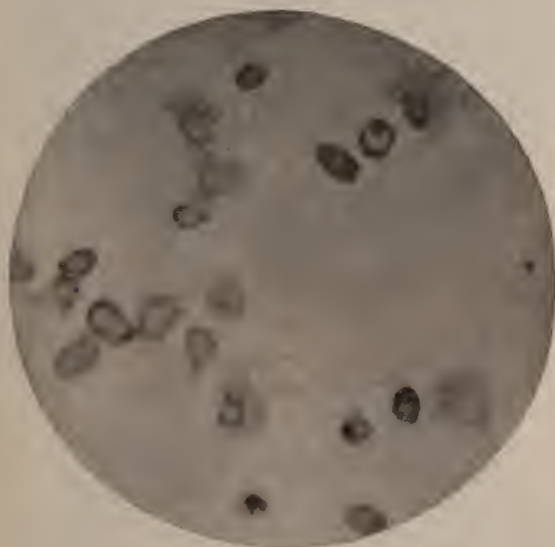


PLATE I.

Slide from blood 24 hours before death, showing extreme degenerative changes with fragmentation.

The upper end of the left humerus was examined. The marrow was dark red in color and of a soft semi-fluid consistency. No yellow marrow was present. Microscopically the marrow showed few normal red cells, a few normoblasts, and a large number of megakaryoblasts, some having two and even three nuclei. They stained well. There was less granular de-

generation of the red cells apparent in the marrow than in the circulation, and also less distortion of the cells. The colorless cells present were large, hyaline, and mostly mononuclear. A number of myelocytes were present, fat cells were absent.

**The Spinal Cord:** The cerebro-spinal fluid of the subarachnoid space was considerably increased in amount. Microscopically the cells of the anterior and posterior horns show the Nissles' granules fairly normal. Few cells show chromatic degeneration and dislocation of nuclei, cells of Clarke's column show chromatolysis. Moderate neuroglia increase. Areas of round cell infiltration about hypertrophied neuroglia cells. Fat degeneration?

#### SUMMARY.

The clinical points of interest in this case were first the remissions in symptoms which are at present without an adequate explanation. The attack of chills, fever and sweating is also unexplained, but by those who support the theory of excessive hemolysis as the cause of the disease these attacks have been referred to as an argument in favor of that theory, as has also the temperature, usually present during the disease. The condition of oral sepsis in this case could not be used as an argument in support of the theory that the hemolysis is due to that toxemia, since it occurred after the disease was well advanced and had never been present before. It was probably due to the lowered vitality and may no doubt have contributed to continue the disease. It certainly was not primary. Hunter has found streptococci in his cases of glossitis with anemia and has called it a specific glossitis. The organisms here were staphylococci. The presence of the round worms has bothered my diagnosis that this case was one of the primary type. In view of the fact that these worms have been found only about a dozen times in this country, I am sorry that we did not send some of the material to the men who have been doing work in this line for confirmatory examination.

As to their presence having been a factor in the production of the anemia in this case there is considerable doubt. It seems scarcely possible that it was a primary factor, as there was little if any bowel disturbance until after the disease had progressed for about a year. And

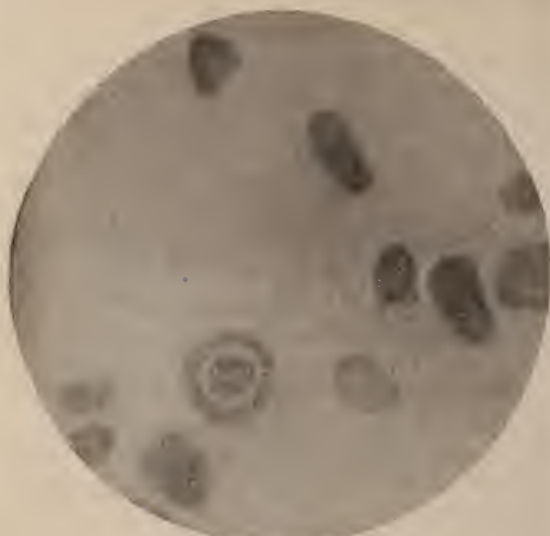


PLATE II.



PLATE III.



PLATE IV.

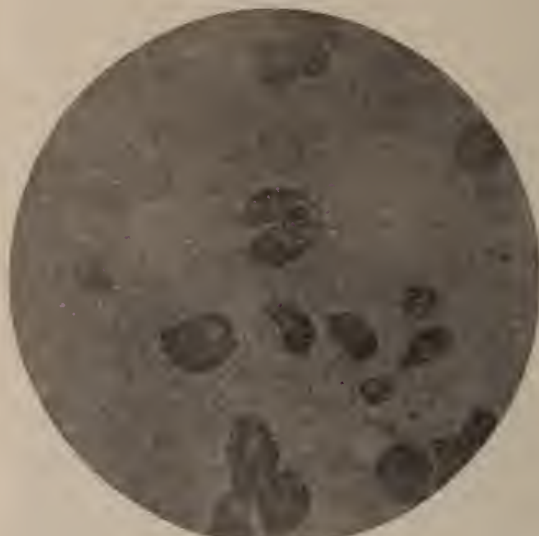


PLATE V.

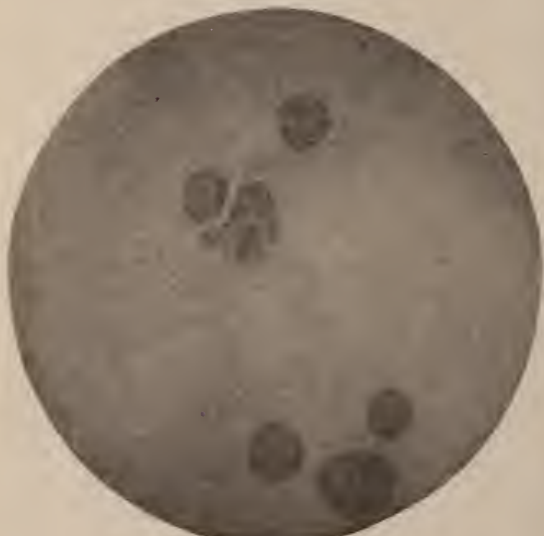


PLATE VI.



PLATE VII.

## PLATES No. II-VII.

Slides made from marrow of *left humerus*; showing the variations in size and shape of erythrocytes and the presence of large nucleated cells, (megakaryocytes) with successive stages of nuclear extrusion.



at the autopsy and since we have been unable to find any in the intestine. In the cases of infection observed the anemia produced by this particular parasite has been slight and even lacking. In some cases eosinophilia has been present. It was not present in this case.

The blood changes in this case were very interesting. 1. There were very few nucleated red cells present at any time and they were found in only half of the examinations. 2. The most striking thing of the blood condition was the presence of many degenerating red cells, the degeneration being shown best by the use of eosin and methylene blue stains, the red cells normally taking the eosin or red stain. In these degenerating cells granules were present, the granules taking the blue stain and contrasting strongly with the rest of the cell.

Many of the cells showed also the presence of extrusions of the protoplasm. These also took the blue stain. In some cells the extrusions were practically being cut off, and some of the cells were completely destroyed. Nearly all of the degenerating cells were large in size.

Ehrlich says many of the small red cells (microcytes) are formed by fragmentation, but it certainly could not be from the degenerative fragmentation in this case, as the microcytes did not as a rule take any blue stain, that is, show degeneration. Fisch claims in a recent paper that the granular degeneration is wrongly named, being he says a regenerative one, and gives reasons, among them being that it is normal in the foetus and certain animals, and also that it disappears before death.

If it is normal in the foetus, in this disease in which there is more or less reversion to the foetal type of blood, the red cells at their source in the red marrow certainly should show the granular condition as much or more than elsewhere. In this case the red cells in the marrow showed the change less than in the peripheral blood. The last examination of the blood in this case was twenty-four hours before death and the granular condition at that time was more marked than at any previous time. I cannot say positively that it did not disappear in the last twenty-four hours, but I can say that I don't believe that it did. I think that in this case the change was a degenerative one.

The symptoms on the part of the nervous system were varied though apparently the involvement of the cord was progressive. Ap-

parently the lateral columns were first involved as shown by the spasticity, increased reflexes and rigidity with weakness, later the paraesthesias, Romberg's sign, and ataxia and gave the symptoms of additional involvement of the posterior columns, although the reflexes were still increased.

Evidently there must have been some late involvement of the anterior horns on account of the wasting of the muscles, and the absolute loss of power, with diminished reflexes. The symptoms pointed in this case to an ascending involvement of the cord. The absence of headache and the very slight amount of pain until the last few days are also notable features.

The interesting pathological findings were first, the absence of fatty or other degenerations. This is especially noteworthy, as owing to the prolonged impairment of the character of the blood these degenerations might confidently be expected, and in the great majority of cases are found; second, the absences of demonstrable hemorrhages (except the hemorrhoids) both clinically and post-mortem, is also rather unusual; third, the presence of a comparatively normal gastric mucous membrane militates, in this case at least, to the detriment of the theory that gastric atrophy is the cause of primary pernicious anemia. This theory has been practically exploded by Einhorn (Med. Record, Feb. 28, 1903) whose conclusions from a study of a number of cases of achylia gastrica were as follows: 1. In most cases of achylia gastrica a nearly normal condition of the blood is found. 2. We occasionally observe the presence of gastric juice in cases of pernicious anemia, sometimes even in increased amount. If pernicious anemia were caused by an atrophy of the gastric mucous membrane the achylia would have to be well marked as soon as the symptoms of blood disease were apparent. Both may, however, be due to the same cause, or one find a ready soil when the other is present. In this case the blood symptoms were well marked before the stomach symptoms were apparent, and during the remission the digestion was normal.

The deposits of iron in this case are especially interesting. The presence of deposits in the heart muscle I have been unable to find recorded. The small amount of iron in the spleen corresponds with many of the reported cases. Opinions differ, however, as to the significance

of this, some holding it as a proof that destruction of the cells is increased in the spleen and others that the deposition of the pigment takes place where the cells are destroyed and that consequently few in pernicious anemia are destroyed in the spleen.

The enormous deposit in the liver corresponds to the deposits described by Hunter, who thinks the destruction of red cells takes place in the portal system by toxins from the intestine and stomach. He says that when the destruction of red cells occurs outside of the portal system that the deposits are not found in the liver in the amount or in the arrangement that they are when the destruction occurs in the portal system. Further he says hemoglobinuria occurs if the destruction occurs outside of the portal system but is not present if the destruction occurs in the portal system. In pernicious anemia the arrangement of the iron pigment in the liver and the absence of hemoglobin in the urine he holds to be good evidence that the blood destruction in the condition takes place in the portal system.

The presence of the pigment in the kidneys is said to be because it is there for excretion and in fact the iron in the urine in cases of pernicious anemia has been found increased.

The only features present in this case which are peculiar to it and which I have been unable to find described are, the extreme degenerative changes in the red cells, the probably accidental presence of the round worms, and the finding of iron pigment in the heart muscle.

In conclusion I have the pleasure of thanking Dr. F. E. Clark for sections of normal tissue; Dr. H. D. Bone and Dr. W. D. Berry of the State Hospital for doing considerable work, practically all of the microscopical examination of the Spinal Cord; Mr. Percy Carpenter of the State Laboratory for the very fine photomicrographs, and especially am I indebted to Dr. B. H. Stone, whose examinations of the blood, feces, cultures, etc., and whose help at the autopsy and in the subsequent microscopical work have contributed largely to the value of this paper.

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The regular meeting of the Burlington and Chittenden County Clinical Society will be held at the Medical College, Sept. 27. Dr. C. A. Pease will read a paper on "Tetanus," and the discussion will be opened by Dr. P. E. McSweeney.

## ANGINA PECTORIS.\*

*By A. C. Bailey, M. D., of Randolph, Vt.*

The disease to which Dr. Heberden assigned the name of Angina Pectoris in the year of 1772 has, since that time, remained in considerable uncertainty as to its symptoms, pathology, and treatment, although at the present day it has become to be regarded as a neurosis of the heart due to organic changes in its structure. The most prominent symptom by which it is characterized, and from which it derives its name, is a peculiar constriction, anguish, pain, or oppression, which is experienced in the epigastrium or lower part of the chest, to which is generally added flatulence, and eructations. The symptoms which attend an attack of angina pectoris are quite characteristic. The attack commences with a sense of pain, pressure, or constriction in the cardiac region or at the end of the sternum. There is, at the same time, a numbness with occasional pain in the left arm, rarely in both arms, and sometimes in all the limbs. The painful sensation is particularly felt on the inner side of the arm, as low as the elbow. Different cases differ much as regards the intensity of the pain and the situations in which it is felt.

The action of the heart is generally more or less disturbed. The beats are irregular, sometimes violent and sometimes feeble and slow. Cases differ greatly as regards, not only the severity of the paroxysms, but their duration and the frequency of their occurrence. As a rule, if one paroxysm has been experienced, other paroxysms will follow sooner or later. But it is my purpose at this time to direct our thoughts more particularly to the pathology of the disease now under consideration; believing that the addition of a nervous element is necessary, and that that nervous element has its seat in the pneumogastive or cardiac plexus, which gives rise to cardiac spasms, although the particular nerves in which the complaint is seated may vary. Numerous cases have occurred, presenting the characteristic signs of angina pectoris, in which perfect recovery has taken place; which could scarcely have been possible if any considerable organic change had existed in the structures of the heart. Many other cases of angina which have proved fatal, and have been inspected after death, have not ex-

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\*Read before the Washington County Medical Society at Barre, March 14, 1905.



hibited any traces of diseased structure in that organ, or of the larger vessels.

From these circumstances we must conclude that the organic changes in the structure of the heart are not essential to the disease, and that although they frequently co-exist with angina, yet they are not the cause of those symptoms to which that name has been assigned. We must then look to some other source for the explanation of the phenomena. Let us look therefore for a moment at the symptoms of irritation of the spinal marrow.

The symptoms of this affection consist in an infinite variety of morbid functions of the nerve of sensation and volition which have their origin in the spinal marrow and the parts in which these morbid functions are exhibited, bear reference, of course to the distribution of the spinal nerves. The morbid states of sensation include every variety from the slightest deviation, from the healthy sensibility of any part, to the most painful neuralgic affections on the one hand and to complete numbness or loss of feeling on the other; including pains which may be fixed, or darting in the direction of the nerves, prickling, and tingling sensations, a sense of creeping in the skin, or cold water trickling over it, and numerous other states of perverted sensations, of which words are inadequate to convey a description. In the muscular system we find weakness or loss of power, tremors, spasms, or cramps, and sometimes a tendency to rigidity. In some cases these spasms exist in so slight a degree, that the patient considers them of no or little importance and will only admit their existence when quizzed particularly respecting them. The only complaint made is an unaccountable sense of weakness and inability of exertion from dyspnea. In other case some alarm is excited. In one patient, a lady of 24 years of age, unmarried and of unblemished character, suffering from pain in the scalp, the idea of serious disease of the brain was suggested and the distension of the abdomen was so great from the accumulation of gas in the stomach and bowels, that some loose tongued individuals had pronounced her pregnant. Others having the pain in other situations have suspected lung or heart troubles, or some organic disease of the abdominal viscera as the pain may have been located respectively, all tending to harass the mind of the patient. Some of these cases where their duties require the complete ex-

ertion of their energies, have, as I believe been unjustly accused of indolence. They have felt an uncontrollable disinclination to exertion without even themselves being aware of this inertness.

This affection is usually of protracted duration. In most of these cases the disease has existed for a series of years, without its real nature having been suspected; and when asked respecting any tender spots on their spine will answer you in the negative until digital examination is made. The patients and their medical attendants having regarded it throughout as a rheumatic or a nervous affection. In these cases, tenderness in the portion of the vertebral column, corresponding to the origin of the affected nerves, is generally, strikingly, evinced by pressure. In one case the tenderness is so great that the slightest pressure will cause pain to strike from the spine to the seat of the spasm. In all these patients the affection is confined to some particular portion of the spine, either in different parts of the same division of the vertebral column, or in more remote portions at the same time.

The symptoms, of course, vary according to the particular portions of the spine which is affected. When the upper cervical portion of the spinal marrow is diseased, as evinced by pressure, the pain is referred to the head, with vertigo, and sometimes tinnitus aurium, cephalalgia confined to the posterior and lateral parts of the head. A stiff neck in the morning quite frequently attends the affection of this portion of the spine. When the lower cervical portion of the spine is affected, a morbid state of the nerves going to the upper extremities, shoulders, and thorax is observed. Pains are felt in different parts of the arm, shoulders and breast. Sometimes the pain is fixed at some point near the clavical, scapular or shoulder joint, at the insertion of the deltoid muscle, or near the elbow. Sometimes the pain takes the course of the anterior thoracic branches of the bronchial plexus. Frequently one or both of the mammae are very sensitive and painful on pressure. Prickling and numbness attend the upper extremities, also weakness and inability to perform complete extension or rotation. Usually the pains in the upper extremities are felt more severely on the left than on the right side. When the upper dorsal portion is affected, in addition to the morbid sensations in the upper extremities, there is often fixed pain in

some parts of the intercostal muscles which we call pleurodynia; very often there is a sense of constriction across the sternum in the region of the diaphragm, and sometimes a feeling like a cord drawn around the waist. Palpitation of the heart is occasionally complained of. The affection of the lumbar and several portions of the spinal cord often produce a sense of insecurity in walking, their knees totter and they are scarcely able to walk. In no case is there any deformity of the spine, and I think not of the vertebra, although disease of the vertebra may co-exist with that of the spinal marrow, or act as an exciting cause of an inflammatory state of the nervous structures which they contain. But after all these symptoms which I have enumerated as occurring with disease of the spinal marrow, there are other symptoms which lead me to look further, or somewhere else, for the cause.

While studying the cases which have come under my notice I was led to turn my attention to irritation of the ganglia of the sympathetic nerve for a possible cause of the train of symptoms accompanying angina pectoris. Since it is subject to the same state of disease which the spinal marrow is, it is well to consider it in this connection. Dr. Teals of London, William A. Hammond of New York and others tell us that as the disease of the marrow may be confined to one portion, or exist in different portions, so the affection of the ganglia may be confined to one of these nervous masses, may exist in several which are contiguous, or remote from each other. They further say that the disease of the ganglia is seldom found except in conjunction with that of the corresponding portions of the spinal marrow, whereas the spinal marrow is often affected without the neighboring ganglia being under the influence of the disease.

Thus we may find symptoms of disease of any portion of the spinal marrow without any evidence of its existence in the corresponding ganglia, frequently symptoms of both combined, but very rarely symptoms referable to the ganglia, without the spinal marrow being implicated. The principal symptoms given, as resulting from irritation from the ganglia, of the sympathetic, are to be found in organs which derive their names from this source. The involuntary muscles, deriving their power from the sympathetic, have their action altered as is shown by spasms, and irregular contrac-

tions. The heart is seized with palpitations, the muscular fibres connected with the bronchial apparatus are thrown into spasms as are also those of the stomach and intestines. The sensibility of the organs which derive sentient power from the great sympathetic, is variously perverted. The heart and lungs, the stomach and intestines are liable to similar neuralgia, the nervous filaments being the seat of the pain. The kidneys and bladder, and the uterus are liable to the same perverted state of sensibility.

The secretions also undergo alterations, products being formed, which in health have no existence. This is exemplified by the enormous secretions of air which sometimes occur in the stomach. Dr. Teale says that the urine is sometimes influenced, and that leucorrhea is frequently a concomitant, also irregularities in the catamenia are often observed, the discharge being generally in excess. The authors which I have quoted further say that the ganglia most liable to the disease are the middle and lower thoracic, from which the splanchnic nerves are derived giving rise to disorder of the stomach. I have found the last remarks true in one case at least which came under my observation a few months ago and which to my mind illustrates the irritation of the ganglia.

Miss B., aged 24, unmarried, had been treated more or less by different physicians for over two years for dyspepsia from some unknown cause. Without investigating very closely, I gave everything I knew from time to time for dyspepsia but could not see that my medicine did any good. After a few days she told me that she had been troubled with leucorrhea for over two years and that she was irregular in her catamenia. I administered the usual remedies and ordered vaginal injections, and I knew that my directions were followed with exactness, but no benefit was derived. So that to satisfy myself, a better and closer examination was necessary which was obtained with the following results. Slight palpitation, neuralgia and leucorrhea. She complains of pain and oppression at the stomach, vomittings, at first, pains in the head, painful oppression and tightness across the epigastrium, aching pains in the elbows and shoulders, and upper part of neck and occipital region, darting pains in temples, vertigo, aching in the loins, profuse leucorrhea pain in lower extremities, cata-



menia irregular, bowels torpid, distension of stomach, pain in the lower intercostal muscles on left side and there is great muscular debility and nervousness. Her complaint's undergo considerable aggravation in the evening and early part of the night. She has not enjoyed good health for over four years but has been more or less severely affected during the last three months. The spine is tender through its entire length but more particularly at the third, sixth and seventh cervical vertebra, the first dorsal and from the fifth to the tenth dorsal vertebra and the two lower lumbar vertebra. Recumbency and a blister to the cervical vertebra was advised. As soon as the blister filled cephalalgia ceased; and although for some time she had been subject to wakefulness and had not been able to procure repose even from the use of opiates she was now able to sleep comfortably.

But one other case which has come under my observation and which was interesting to me at the time, was diagnosed angina pectoris and I never had reasons to change the decision. When Mr. C. consulted me he was about 45 years of age and of healthy appearance, he complained of severe attacks of illness regularly every evening at about seven o'clock and in the morning from two to four o'clock. The paroxysms commenced with an undescrivable sense of tightness across the thorax at about the lower portion of the sternum, together with pains extending from neck down the left arm and over the left breast. At the shoulder and elbow the pain was very severe and sometimes extended to the wrist and hand. The pain in the arm was sometimes so severe that he grasped it with his right hand from which he found some relief. The right arm was nearly free from pain, he was troubled with a pulsation in the epigastrium but no palpitations. A sensation of suffocation and shortness of breath was sometimes experienced. His appetite was deficient, food remaining a long time in the stomach undigested. The food was sometimes regurgitated during a paroxysm. There was some difficulty in the morning about moving the left arm. Pains occurred in the abdomen in the hypogastrium at the time of making water and a difficulty in voiding urine, which was turbid, high colored and scanty. Bowels generally confined, and he labored under a constant feeling of debility. The attacks were attended with coldness of the feet and legs, pallor

of the countenance and a feeble and oppressed pulse. After this state of affairs has continued from two to four hours the pain and oppression began to be alleviated by loud and continued discharges of air from the stomach. Afterwards the oppression diminishes, the pain abates, the warmth of the extremities returns and he feels quite well, except a sense of numbness in the left arm. During the interval he complains of weakness in the arm, prickling and a sense of weight at the stomach. These paroxysms have been troubling the patient for four years. At first they were less frequent and severe. He has been treated by several physicians for dyspepsia of different types, heart troubles, etc., in short he has been treated and suffered many things of many physicians and was nothing bettered.

On examining the spine the second, third and fourth cervical vertebra, and the eighth, ninth and tenth dorsal vertebra, were very sensitive to pressure. The intermediate portions slightly sensitive. A series of blisters were applied to the spine so as to cover the tender spots for a period of three weeks, with an abatement of the distressing symptoms to quite a degree. A blister was kept on some portion of the spine for two months with considerable improvement. He died however about three months afterwards quite suddenly during one of these paroxysms or shortly following it. I have seen two cases of a much milder character since, which have apparently recovered.

As regards the pathology of angina pectoris the writers of earlier date agree in a measure with those of more recent date. Laennec, Parry, Blackall, Burns and others consider the symptoms to be produced by some morbid condition of the heart more especially ossification of the coronary arteries, whereby its muscular powers are impaired. Laennec assigns to the complaint a seat in the nerves, but thinks the particular nerves in which it has its seat may vary. "When," says he, "there exists at the same time painful sensations both in the heart and lungs, it is right to consider the pneumogastric nerve the principle seat of the affection but when the heart is alone affected without any pain in the lungs or difficulty in respiration one would suppose the seat of the complaint to be in the filaments which the heart receives from the sympathetic." Other nerves are sometimes affected from sympathy or from their own anastomosis with those which are

the chief seat of the affection. The nerves derived from the bronchial plexus especially the cubital nerve are always affected and the anterior thoracic branches which arise from the superficial cervical plexus and occasionally the nerves from the lumbar and sacral plexus. Although little is said about it at the present time, still I think that a good deal of stress may be laid on the words of Dr. Hammond, viz.: "That it is to the nervous system we must look for the seat of the disease." But Dr. Teale says there is little doubt that the writers of earlier date overlooked the pathological fact viz:—that when any of the nervous masses as the brain, spinal marrow or ganglia are the seat of the disease, the morbid phenomena are not so much exhibited in the masses themselves as in the parts to which the nerves arising from them are distributed. But if I am to except either theory, I prefer this one, because it seems more consistent with actual facts, viz:—to consider these local affections of the nerves merely as symptomatic of disease in the nervous masses from which they are derived, and to refer the morbid affections of the spinal nerves to disease in those portions of the spinal marrow wherever they originate, and the morbid train of symptoms dependent upon the ganglionic nerves to the ganglia from which they are derived. Upon this principle then the constriction at the lower part of the thorax, the tightness round the waist, the obstructed circulation and consequent lividity and anasarca, etc.

From this combination we may easily understand why these affections so often prove fatal and why organic diseases of the heart are so generally though not universally found on dissection of those subjects who have died of angina since the disease seldom proves fatal unless accompanied with some organic disease of the heart. It is also possible and even probable that the disordered state of the nerves of the heart from the affections of the cervical ganglia may predispose to the organic changes in that organ which have been so frequently observed. The paroxysmal exacerbations of the complaint depend upon undue accumulation of blood in the heart which render it incapable of acting with sufficient energy to propel the blood with freedom, especially where there is any organic disease of the heart, or obstruction at the different apertures. And, Dr. Hammond says it is not improbable that

when the nerves of the heart are simply affected from disease of the ganglia and a consequent state of nervous palpitation without organic disease of heart exists; that the muscular structure pains in the lower intercostal and abdominal muscles should be referred to disease of the lower dorsal portion of the spinal marrow, the pains of the stomach, flatulence, etc. to disease of the lower thoracic ganglia of the sympathetic. The pains, numbness, weakness various organic diseases of the heart itself as and lower extremities, to an affection of the cervical portion of the spinal marrow, and the palpitations of the heart and painful affections of the heart and lungs, to the cervical ganglia of the sympathetic. Dr. Loomis says that it is very doubtful whether a nervous element is in any way connected with cardiac spasms or neuralgia, but that angina pectoris is a symptom of organic cardiac disease of long standing.

This inflammatory affection of certain portions of the ganglionic system and of the spinal marrow, is not infrequently accompanied by various organic diseases of the heart itself as ossification of the coronary arteries, of the valves or of the aorta, softening, hypertrophy or dilatation; producing in addition to the symptoms peculiar to disease of the ganglia and spinal marrow, additional symptoms, peculiar to the disease of the heart itself, as the more severe forms of palpitation, intermittent pulsations may be so weak and irritable as to be unable to act with that regularity and decision which is necessary for maintaining a regular transmission of the blood. The cause which excite these paroxysms are such accelerate the circulation or determine the blood more rapidly to the heart than it has the power of transmitting, as passion of the mind, exercise, and congestion in which the blood ceases to circulate freely in the superficial parts of the body and extremities; and is accumulated in some of the internal organs; a state attended with coldness and pallor of the surface, and oppressed function of the different organs which are the seat of the disease.

From any of these causes blood may be accumulated in the heart and large vessels, and when the muscular apparatus of this organ is impaired it may be unable to restore an equal state of the circulation. In this state the heart feels its inability and yields to a temporary paralysis and sometimes its tone is so com-



pletely overpowered that it remains forever paralyzed. The various symptoms which I have described as angina pectoris I have been induced to refer to an affection of some portion or portions of spinal marrow and of the corresponding ganglia of the sympathetic by the following considerations:

1. The fact, as I have before observed, that most of the morbid phenomena exhibited in the extreme filaments of nerves themselves, but to an affection of the nervous mass from which they are derived.

2. The co-existence of pain on pressing some portion of the spine with the symptoms constituting angina pectoris and the correspondence of the painful part of the spine with the particular symptoms which are present; viz: tenderness in the lower dorsal portion of the spine in conjunction with the stomach affection, constriction, etc., and tenderness in the cervical spine with pains in the arms, breast and shoulders and palpitations.

3. The relief obtained by local antiphlogistic measures to the spine; for instance to the lower dorsal portion when the stomach is affected and there is constriction, and to the cervical portion when there is an affection of the arms and palpitations.

### JAUNDICE.\*

*By M. L. Chandler, M. D., Barre Vt., President of the Vermont State Medical Society.*

Properly speaking jaundice is not a disease, but an effect of disease or a symptom. But it is dealt with in the text books with the same formality as other diseases, and follows such a usual course as to make it profitable to study it as a disease.

The division into hematogenous and hepatogenous jaundice is no longer followed. The form known as hematogenous was supposed to account for many cases formerly, but nearly all cases may be considered as following disease of liver or ducts, or hepatogenous.

Possibly there are some cases of icterus neonatorum due to disorganization of the red blood corpuscles. We seldom see jaundice except from obstruction of bile ducts or disease of the liver. The term simply means a yellowing of the skin and tissue by an absorption of bile.

\*Read before the Washington County Medical Society, December 13, 1904.

Sometimes in malignant disease we may for a time be in doubt as to whether we have a cachexia or jaundice.

The most frequent cause is improper diet. Cold, wet, mental worry and fatigue are sometimes factors. It occurs also in the acute febrile disorders, especially in pneumonia, malaria and the grip. It comes sometimes apparently as an epidemic. We all remember what a large number of cases followed the return of the militia from the south in 1898. Sometimes we see it due to the mechanical pressure from heart lesions or tumors pressing against the ducts.

Physical examination generally shows a swelling of the liver which is attended with more or less pain and soreness.

The early symptoms are lassitude, poor digestion, constipation clay-colored stools. The urine is high colored. A very slow pulse is often one of the best early symptoms of absorption of bile. I speak of the early symptoms, those occurring before the icterus, especially, as the most stupid of the laity can diagnose jaundice when the color appears. Interval between our visits it sometimes rather embarrassing. The other phenomena attending the disease are fetid stools, urine of high color or greenish yellow and responding to tests for bile. Sometimes the excretion of bile from the kidneys causes an albuminuria, vomiting and itching are common—also dull headache and vertigo. Frequently the patient sees spots before the eyes or has other disturbances of vision. Wakefulness may occur, especially early, or we may get stupor or even coma in the obstructive cases as well as in acute yellow atrophy. The symptoms depend much upon the cause, but it is remarkable that some cases of total obstruction of the ducts for several days may not show jaundice.

Cases of obstruction of the common duct by calculi are of course out of the ordinary and cause so much pain that the condition should be diagnosed before the jaundice appears. Those having cancer or cirrhosis are also likely to have been under observation a long time before jaundice appears. Acute yellow atrophy we may disregard because so seldom seen.

The temperature is usually raised at some time during the onset. If it continues high it is an indication of a serious nature. Hemorrhagic spots in skin and mucous membrane are also serious.

The treatment depends much upon the cause. Simple obstruction coming by extension of inflammation from the stomach or duodenum requires sedatives as bismuth and the alkalies as well as mercurial purges, salines and high enemata. If there is fever acetanilid does good and in children aconite is useful. If the cause is from direction of the liver, as from gallstones or more particularly from a catarrhal inflammation of the gall bladder or its ducts, then the cholagogues and salines are more useful. We may use some counter irritation. There is much to be said concerning the action of the different drugs upon the liver and its secretions. First of all, I believe the most useful measure is the high enema. Phosphate of sodium or salicylate of sodium with hot water are very useful in promoting the secretion of a watery bile.

The mercurials are nearly all used but it is question if any directly enter the liver to effect its secretion. All agree they do good by depleting the upper intestinal tract and acting as intestinal antiseptics. Ammonium chlorid and nitro hydrochloric acid are useful, the latter both internally and externally is of much service. Of vegetable drugs taraxacum, podophyllum and rhubarb are supposed to have selective action upon the liver excretions.

Last but not least in importance is the consideration of diet. Broadly speaking all foods requiring the aid of bile for their assimilation should be avoided, so too should the foods of which a portion is retained or stored up by the liver. We must exclude all sweets, all fats and alcoholics. Even milk is disliked by these patients. Starchy foods may be allowed some, lean meat and meat broths, oysters and tripe, green vegetables seem to have a very favorable action upon the secretion of bile.

### Injuries to the Child's Head During Labor

was an important subject discussed at the recent meeting of the A. M. A. Dr. B. Sachs, of New York City, spoke of his efforts through many years to interest both the obstetrician and the general practitioner on this subject and of his belief that there are many imbeciles, paralytics and epileptics living to-day who might have been normal if delivery had been properly performed in their cases. In his experience many cases of infantile cerebral paralysis were either

primiparal, or such as had been born after prolonged, often dry, labor. Statistics seem to prove that there is less harm done by forceps delivery than by prolonged labor, although unskilful manipulation of instruments is of course attended with disaster. If the life of the mother is not endangered thereby, it were best to curtail the period of labor as much as possible, and not to wait until the child's heart action becomes feeble. Sachs refers to Cushing's suggestion to open the skull at birth in severe cases of meningeal hemorrhage and to wash out the blood clots. In three out of five cases thus operated upon a cure seems to have been effected. Such a daring procedure is, however, of limited application. In general dependence must be placed upon prophylactic measures and upon skilful manipulation during labor. Sachs (himself a neurologist) believes that obstetricians have been too indifferent towards the welfare of the child, permitting labors to be unnecessarily prolonged and "in conditions of distinct disadvantage to them and to society for the entire period of their natural lives." Dr. Gilbert, of Louisville, has in appropriate cases, induced labor, especially in primiparal, two or three weeks prior to the full term; he employs a tampon soaked in glycerine solution and never introduces an instrument within the uterus for this purpose.—*Medical Times*.

**Variability of Plants**—Aconite gathered on the summits of the Alps is inert in comparison to that obtained in a lower altitude. In other cases an excess of humidity can render more active the principle of some plants. For instance, celery, when cultivated in dry fields is good to eat; if grown in marshy ground, on the contrary, it is acrid and unwholesome. The soil has a great influence on the medicinal value of the leaves, flowers, and roots of a plant, which is demonstrated by chemical analysis. "Salsole," near the sea, is strong in soda; but inland it has only a small quantity. Rhubarb, when cultivated in France, contains much calcium, while that growing wild in the Himalayas has almost none. The time of gathering the leaves has also a great influence on their medicinal value; the leaves of many plants and trees are full of potash when in full activity of growth, and show lack of it when ready to fall. In the same way, the young branches possess active principles lacking in the older ones.—*American Journal of Clinical Medicine*.



## Vermont Medical Monthly.

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## EDITORIAL.

### STATE MEDICAL MEETING.

THE ANNUAL MEETING OF THE VERMONT STATE MEDICAL SOCIETY WILL BE HELD AT BARRE, OCTOBER 11 AND 12—PROVISIONAL PROGRAM.

The annual meeting of our society is to be held at Barre on October 11 and 12. The Committee of Arrangements, consisting of Drs. J. W. Jackson, O. G. Stickney and J. E. McSweeney, have made ample provision for the comfort and entertainment of all visiting members. They have engaged spacious apartments in the Blanchard Block for Headquarters, where all the meetings will be held and where all the exhibitors will have rooms for the display of their several lines. With entertainment at the Vincitia Club, automobile trips around the city and visits to the granite quarries, the social side will be well looked after. They extend a most cordial invitation to the ladies to be present and partake of their hospitality.

The forenoon of the first day will be devoted to the reading of the reports of the officers and delegates. On the evening of the first day

the annual banquet will take place, W. L. Hazen of Chester Depot, toastmaster. The papers thus far arranged for are as follows:

### PROVISIONAL PROGRAM.

President's Address,	Nephrolithiasis
M. L. Chandler, Barre.	
The Treatment of Fractures,	Vice-Pres. E. S. Allbee.
The Treatment of Chronic Cardio-Vascular Diseases,	Prof. Egbert LeFevre, New York.
Arterio-Sclerosis,	Prof. H. D. Arnold, Boston.
Nephritis,	A symposium divided into five heads.
Trichinosis,	C. H. Beecher, Burlington.
Commercial Therapeutists and Therapeutics,	G. L. Bates
The Preparation and After-Care of Surgical Cases, with Special Reference to Abdominal Surgery,	H. C. Tinkham, Burlington.
Specific Treatment of Pneumonia,	C. B. Doane, Springfield.
Tetanus, with Special Reference to Fourth of July Injuries,	C. A. Pease, Burlington.
There will probably be one or two more papers on the program.	

As the time of the annual meeting of the State Society approaches I would urge upon all the members the desirability of making a strong effort to attend.

This year we are to meet for the first time in the progressive and modern city of Barre. From its central location and many attractions it would seem as if a large number of members might avail themselves of the opportunity to be present.

Prof. Egbert LeFevre of the Bellevue University College of New York and Prof. H. D. Arnold of Tufts Medical College of Boston will be present as guests of the society.

The relaxation from the routine work of the general practitioner, the social intercourse one with another and the scientific information obtained will well repay one to be present.

The physicians of Barre are ready to open their doors and extend a most gracious hospitality to the society.

We certainly shall expect a large attendance.

GEO. H. GORHAM, SEC'Y.

The House of Delegates of the Minnesota State Medical Association unanimously adopted the following resolutions on June 19, 1906:

*Resolved*, By the House of Delegates of the Minnesota State Medical Association, in regular convention assembled, That we hereby pledge ourselves to exercise skill and care in all examinations for life insurance companies.

*Resolved*, That we hereby pledge ourselves to adhere strictly to the following schedule of fees for life insurance companies:

A minimum fee of \$5.00 for each and every ordinary examination, including chemical analysis of the urine.

A minimum fee of \$10.00 for each and every examination where a microscopic examination of urine sputum, or other secretion is required.

A minimum fee of \$3.00 for each certificate of health for renewal or lapsed policy.

*Resolved*, That we do not believe any examination for life insurance is complete without the examination of the urine of the applicant, and we are unwilling to make any recommendation on an incomplete examination.

*Resolved*, That these resolutions shall go into effect and be morally binding upon the members of the Minnesota State Medical Association on and after thirty days subsequent to their adoption.

*Resolved*, That the Secretary shall within said time send a copy of these resolutions to every insurance company doing business within the State of Minnesota.

Resolutions similar to the above have been adopted by the State Medical Societies of Georgia, Florida, South Carolina and North Carolina and in many county societies all over the country.

The condition which has called forth these resolutions is the fact that many of the old line companies who have been paying a minimum examination fee of \$5 have reduced this fee to \$3. An examination of the laws enacted by the New York General Assembly in session in 1906, as recommended by the Armstrong Committee, gives the reasons which the companies advance for this reduction. The section which refers to this matter is as follows:

97. *Limitation of Expenses.*—No domestic life insurance corporation shall in any year after the year nineteen hundred and six expend or become liable for or permit any person, firm or corporation to extend on its behalf or under any agreement with it (1) for commissions or first year's premiums, (2) for compensation, not paid by commissions, for services in obtaining new insurance exclusive

of salaries paid in good faith for agency supervision either at the home office or at branch offices, (3) for medical examinations and inspections of proposed risks, and (4) for advances to agents, an amount exceeding in the aggregate the total loadings on the premiums for the first year of insurance received in said calendar year (calculated on the basis of the American experience table of mortality with interest at the rate of three and one-half percentum per annum) and the present values of the assumed mortality gains for the first five years of insurance on the policies on which the first premium or installment thereof has been received during such calendar year, as ascertained by the select and ultimate method of valuation as provided in Section 84 of this chapter.

Now the companies say that it will be quite necessary because of this section, to cut the medical examiners' fee that they may be able to obtain new business. If the Armstrong Committee, in drafting the insurance laws had not mentioned medical examinations, the companies could and in all probability would pay their medical examiners, the regular fee of \$5.

The only department of these companies which was not criticized in the recent disclosures of criminal extravagance in the management of life insurance is the medical department. Yet the first step in economy which these companies have taken is a 40 per cent. reduction in fees paid to the medical examiners. Aside from the rank injustice and lack of appreciation of the medical department shown by this action, it will prove very poor economy. The whole fabric of life insurance is built upon the medical selection of the insured. No company can do a profitable business unless the unsound individuals who apply for insurance are excluded by a careful examination by the physician who first passes upon the risk. Such an examination calls for very expert knowledge. It is not merely a question of discovering lesions but of making prognosis and \$5 is poor compensation for work of such importance. Several years ago, the New York Life



Insurance Company made such a reduction and found that it was received without any general expression of disapproval; this probably has encouraged the other companies that such an action on their part would meet with the same reception. It is a foregone conclusion that these companies have a right to fix the fees which they are willing to pay but it is also true that the physicians may or may not accept these fees and it is in just such emergencies that our county and state organizations should be of great value. If such resolutions are passed by a majority of the state societies, the cut in examiners' fees will undoubtedly have to be given up or examinations will be done by a low grade class of practitioners who are outside the society and such a result will be disastrous to the insurance companies.

Before our next issue, the meeting of the Vermont State Medical Society at Barre will be history. These meetings of the Vermont Medical Society should be red letter days for every society member (and every regular practitioner should be a member) and the coming meeting is especially significant. There are many things of unusual importance to be threshed out there. The contract practice question, life insurance fees, change of date of state meeting, publication of transactions, etc. Of course it is manifestly impossible for anything like all of the members to attend these meetings but we should have 50 per cent of our membership present. We can rest assured that Dr. Gorham will give us a good program. But do not let us forget that success does not depend half so much upon the readers of papers as upon the general discussions. Let us all make a special effort to make the Barre meeting a record breaker. All of us can not attend every meeting of the state medical society but we all can and should be members of this and our county organization. It is only by co-operation that a physician can protect

himself in the day of unscrupulous competition and quackery. But remember that if you gain protection from your societies, that you have an obligation toward these organizations and the men who form them. And one of the essential obligations is the payment of dues. The fees of our state society are ridiculously low and yet no one who has not performed the thankless function of treasurer to one of these organizations, can possibly appreciate the difficulty of collecting the one or two dollars of annual dues. There are only three county societies in the state whose dues to the state society are not in arrears. We are firmly convinced of the truth of the statement that doctors are the worst business men as a class in this country. It must be simply a matter of carelessness on the part of the individual but it bids fair to be disastrous to the organization.

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### NEWS AND PERSONAL ITEMS.

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*We desire to make this column of personal interest to all. Physicians are requested to send news items.*

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#### VERMONT.

Dr. W. R. Kinson has left Felchville and gone to Cavendish.

Dr. E. C. Reynolds has moved from Ferrisburgh to Fairfax.

Dr. Geo. H. Dill has moved to North Bennington from Proctorsville.

Dr. Nathan Avery has located for the practice of medicine in Warren.

Dr. Geo. O. Coutu of Burlington was married September 3 to Miss Anna J. Dubuc.

Dr. H. C. Tinkham of Burlington, accompanied by Wm. G. R. Pisek of New York, has gone on a hunting trip to Newfoundland.

Dr. C. K. Johnson has removed from Burlington to Bristol. His residence in Burlington has been purchased by Dr. C. F. Dalton.

Dr. C. B. Dunn of Winooski has arranged to spend part of his time as assistant physician at Dr. Prime's Sanitarium in Burlington.

Dr. Lyman Allen of Burlington, who underwent an operation for gall stones at Boston recently, is progressing favorably and will soon be able to leave the hospital.

Dr. Frank H. Dunbar of Swanton died at the Mary Fletcher Hospital in Burlington September 4. He was operated upon for gall stones two months ago and although he seemed to be recovering satisfactorily for a time, it soon became apparent that other trouble had developed and he was returned to the hospital in an exhausted condition, from which he did not rally. Dr. Dunbar was 37 years old, having been a native of Swanton, where most of his life was spent. He was graduated from the University of Vermont College of Medicine in 1903 and began practice at once in Swanton, soon after being appointed health officer. He is survived by a widow and two daughters.

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#### NEW HAMPSHIRE.

Dr. J. J. Derven has taken the practice of Dr. E. J. Barney at Berlin for a few months.

Dr. William F. Wallace died at Rochester September 5, being 56 years of age. He was born in Concord, and practiced medicine in Milton, Bradford and Plaiston.

Dr. A. A. E. Brien, one of the leading French doctors of New Hampshire, was operated upon for cancer last week in Boston, and was brought home to Manchester after the operation.

The Wentworth Hospital at Dover, the gift of Arioch Wentworth, formerly of Boston, was dedicated August 30. Colonel Daniel Hall of Dover made the dedicatory address. The hospital is a two-story brick structure, built and equipped at a cost of about \$100,000. It will accommodate about a hundred patients.

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#### MASSACHUSETTS.

Dr. George Mackie, one of the oldest and most prominent physicians of Attleboro, died August 30. He was 56 years old, and was born in New Bedford.

Dr. James A. Finn of Roxbury died August 1. He was born in South Boston 65 years ago and was graduated at the Harvard Medical School in the class of 1875.

Dr. Alvah B. Dearborn, city physician in Somerville for a number of years, died August 19 at his home in that city, aged 64. He was born at Topsham, Me., August 3, 1842, and was a graduate of Bowdoin College and the Bowdoin Medical School. He practiced at Newburyport for some time before coming to Somerville about 20 years ago.

Dr. John Theodore Heard, a well-known physician of Boston, died September 2, at his summer home at Magnolia. Dr. Heard, who was born in Boston in 1836, had a notable Civil War record in his profession, and as surgeon was active in service. He was a graduate of the class of 1859, Harvard College, and attended the Harvard Medical School.

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#### THE DETERMINATION OF THE END OF DANGER OF INFECTION FROM PATIENTS WHO HAVE SUFFERED FROM INFECTIOUS DISEASES.

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This is a matter of much importance which should at this time lend itself to more definite statement. The danger to a community from a case of yellow fever recognized as such is very slight as compared to the danger from a patient who has supposingly recovered from typhoid fever, and yet carries the infection. The knowledge that has amounted to most and which has been most practical in limiting infection has been gained by the experience which has shown the length of time during which isolation is practically necessary. In this matter in regard to some diseases, particularly typhoid fever, there has however been error. The reason for this is found in the history of typhoid fever infection. The patient infected, the germs grow and multiply and produce the characteristic symptoms. Later, the patient gradually develops an immunity to the noxious influence of the germs so that they no longer cause symptoms. The germs themselves persist for quite a time in the body and are found in the urine. This fact accounts not only for the spread of typhoid fever in the most mysterious manner, but it also accounts for the frequency of relapses in the individual even after the patient is apparently well. The examination of a patient bacteriologically for typhoid germs would probably determine the end of the infectious period, but it is a simple matter, if



one could only remember to do it, to administer drugs which have the property of disinfecting the urine.

In regard to diphtheria the disappearance of these specific germs from the throat is properly watched as indicating the end of the infectious period. As to measles we know from experience that the infectious period is short. As to scarlet fever it is longer. The infectious period of syphilis has been a matter of much dispute, but it may become a matter determinable by clinical pathology if the findings of the spirochæta pallida is confirmed as the cause of the disease. The infectious period of gonorrhea is also a matter of much importance which can also only be determined by the findings of clinical pathology. Tuberculosis is probably infectious so long as the tubercle bacilli appear in the sputum, though it is easily conceivable that these germs have various degrees of vitality at various times.

It is an unfortunate thing that the infectiousness of a case is not over when the patient himself has recovered from the acute symptoms of the disease. Every one knows enough to avoid an acute infectious disease, while the patient is suffering. The trouble is that the individual, attacked in the acute form, after living down the disease still carries the germs and is ready to infect other individuals. The physician is often dismissed from a case and his advice no longer followed when a patient is symptomatically well. From this time on the importance of the disease is greater to other people than to the patient.

As these "other people" cannot very well employ a physician to take care of the former patient in their interest, they are banded together as communities and maintain health departments. These health departments are supposed to control the infectious individuals in the interest of the public after the individuals themselves have ceased to have interest in the infectiousness of the disease from which they have recently suffered.

The person who has recently had typhoid fever has no personal interest in the freedom from typhoid germs of the water supply of his town, because he, for the time being, is immune.

The rule should be enforced that every individual who has suffered from an infectious disease of whatever kind, should be restrained from such relations with non-immune people as

would render infection possible until there has been a determination of the end of danger of infection. This may be determined by experience with shows that danger of infection is over at a certain time, but in diseases of indeterminate duration it can only be determined by a careful investigation by the physician and the laborator.—[L. F. Bishop in *N. Y. State Journal of Medicine.*]

## AN EPITOME OF CURRENT MEDICAL LITERATURE.

### MEDICINE.

#### TREATMENT OF EMACIATION.

L. BREISACHER, Detroit, (*Journal A. M. A.*, Aug. 25), finds that leanness may be due to various causes. It is sometimes apparently hereditary, but may arise as a primary or secondary condition. The one great cause, excluding certain emaciating chronic diseases, is insufficient amount of food which may be due to loss of appetite from physical or mental causes, or the result of faulty dietetic habits which are sometimes handed down in families from generation to generation. Frequently, it results from an ignorance of the nutritive significance of particular foods or is the effect of eating but one or two meals a day in persons not fitted for such a regime. It may be due to poverty or nervousness, sexual neurasthenia or hysteria. These latter predominated, together with digestive abnormalities in the majority of his cases, and he has also observed attendant arteriosclerosis and insomnia, which are given by Cabot as causes, in a number of his cases. To a second group of causes belong the gastrointestinal disorders, mechanical or secretory, which he observed in nearly all his patients. He thinks that there is no doubt that the foundation of these disorders is often laid in the artificial feeding of infants. He also mentions the improper metabolism of food and increased oxygenation in the blood which can not be precisely defined. In the treatment, therefore, it is advisable to make thorough examinations for all possible conditions and to ascertain to what degree the stomach and bowels will bear forced feeding and what food will be best taken, digested and absorbed. With these points determined, he maps out a diet list containing from 2,200 to 2,500 calories, and gradually increases this to from 3,800 to 4,500 calories. This extreme diet is divided by him into 250 grains of fat, 150 of albumin and 400 of carbohydrates, amounting altogether to 4,580 calories. He also gives tonics and pushes them to the physiologic limits if necessary. In nervous individuals he uses nerve sedatives but never narcotics. From time to time he notices the excretory activity of the kidneys and compares it with the water intake, which should be from 2,000 to 3,000 c.c. Exercise is lessened or increased according to the demands of the case, and Breisacher also uses tepid baths, cold rubs, massage and electricity. Under this treatment patients often gain very rapidly in weight, calling sometimes for reduction in diet. The chronic underfed usually require from two to six months' careful treatment of this kind.

## INTERNAL ANTISEPTIC TREATMENT OF TUBERCULOSIS.

H. H. MALONE, Augusta, Ga., (*Journal A. M. A.*, Sept. 8.), after remarking on the tolerance of the human system to powerful drugs and the susceptibility of the tubercle bacillus to the destructive action of antiseptics, proposes an antiseptic treatment of tuberculosis. The drugs he would employ are iodine and phenol, the latter lessening the irritating action of the former and permitting the use of larger doses. Both, he claims, also promote constructive metabolism under proper conditions. The irritating and caustic properties of phenol can be materially lessened by proper dilution and still further by the action of camphor, and by gradually increasing the dose, he says, much larger doses may be given to advantage than the authorities would lead up to believe. He mentions a dose of 14 grains every two hours, given by Wigglesworth in influenza and by Atkinson in plague, but he prefers to give smaller doses in the beginning and gradually increase as tolerance is acquired. The formula which he has himself successfully used is given as follows: Phenol and tincture of iodine, each 160 minims; spirit of camphor, 3½ drams; glycerin, C. P., ½ ounce; and equal parts of cherry laurel water, cinnamon water, chloroform water, and tar water to make 15 ounces. Mix and allow to stand until all free iodine disappears. Then make an emulsion by adding one ounce each of cod liver oil and powdered acacia. Begin by giving one teaspoonful in ½ cup of water every 4 hours and gradually increase the dose to a tablespoonful at one hour intervals. Variations can be made on this according to the requirements; much depends on the technic in the management of each individual case. While not speaking positively as to the action of each of the principal ingredients of the above, Malone thinks there is a combination of direct antiseptic action on the bacilli, with a favorable influence exerted, particularly by the iodine and camphor, on phagocytosis and other protective agencies of the living body. The leucocytes are increased in number and symptoms indicate neutralization of toxins or inhibition of their formation. The tubercle bacilli are more deeply stained by carbolic fuchsin in the sputum of patients under this treatment. A detailed report of his results is promised in the future, but they have been so satisfactory as regards disappearance of the bacilli, increase of weight, and of apparent arrest and cure in some even advanced cases, that he is induced to place the method before the profession.

## GONORRHOEA AND SOME OF ITS RESULTS.

E. G. BALLENGER, (*Atlanta Journal-Record of Medicine*, Feb., 1906) makes, in substance, the following statements: The census of 1900 gives the number of men in this country as 20,000,000. Of this number it is estimated that 80 per cent \* \* \* have gonorrhoea. To this disease are due (1) sexual neurasthenia, (2) sterility, (3) general gonorrheal infection, and (4) blindness. Fifty per cent. of all involuntary childless marriages are due to gonorrhoea (Neisser)—the cervical catarrh preventing the entrance of the spermatazoa, etc. Women having it usually can have only one child, as the traumatism of labor spreads the infection (Morrow). About 50% of all blindness was due formerly to gonorrhoea, but now through the use of the Crede method of prophylaxis it is only 20%. Venereal diseases cause more deaths and deplete the population more, by causing abortion and preventing conception, than any other known disease or condition. Gonorrhoea is largely ignored by sanitary bureaus in the registration of contagious diseases.

## TREATMENT OF COMMON COLD.

ATKINSON, in the *British Medical Journal*, says that the quickest relief in case of a common cold is obtained by giving 30 minims of sweet spirits of nitre and 30 drops of aromatic spirits of ammonia in 1 ounce of water, repeating the dose in two and then every four hours. Three or four doses are generally sufficient to put a stop to the discharge. Should the discharge happen to be thick when first seen, then a snuff composed of 1 grain of cocaine, 2 grains of menthol, and 100 grains of boric acid, quickly effects a rapid cure. When the cold has run down into the trachea, as shown by a tickling of the throat whenever a long breath is taken, then a mixture of liq. ammon. acet. 3ij, sp. ether, nit. mix in 1 oz. of water, every four hours, quickly gives the required relief.—*Charlotte Medical Journal*, May, 1906.

## STAIN FOR SPIROCHOETA.

SIMONELLI AND BANDI. (*Reports of Clinic of Royal University of Sierra 1906*) give a simple stain for the spirochoeta ballidu: A gram of eosin and a gram of methylene blue are each dissolved in a litre of water. Both solutions are then mixed and set aside for a few days. After that, it is filtered and the precipitate remaining on the filter washed with distilled water until the filtrate comes away clear. What remains, is dried at room temperature, powdered and a saturated solution made in pure methyl alcohol. The staining procedure is very simple.

(1.) The smeared slide or cover glass is dried in the air; (2.) a few drops of the stain are poured on and allowed to act for a few (4 to 10) seconds; (3.) wash quickly in distilled water and mount in balsam.

It is to be noted that if the object is to obtain a conspicuous coloring of the spirocheta, the staining time should not exceed ten seconds and the washing must be done very rapidly. This gives the spirochoeta a fairly intensive stain and makes them stand out rather prominently among the other almost colorless histologic elements. On the other hand if it is a contrast stain that is desired, it is but necessary to lengthen the staining time a few seconds and then wash so long with distilled water until the smear takes on a faint rose color. This same method gives good results as a stain for gonococci.

## NASAL DISEASE AND NEURALGIA.

L. S. SOMERS, Philadelphia (*Journal A. M. A.* Sept. 8), describes and gives illustrative cases of various types of facial neuralgia occurring from disease of the nose and its accessory sinuses. Nasal neuralgia, *per se*, does not necessarily follow from disease of the nose itself, the pain there located may be due to changes in other regions, as the Gasserian ganglion, etc., although the nose itself, he states, may be diseased, as a consequence rather than as a cause. Of all the disorders of the nasal chambers, exclusive of sinusitis, hypertrophy of the turbinates, especially the middle one, is the most frequent cause of neuralgia. Pressure of the turbinate against the septum may cause both facial and supraorbital neuralgia, the latter from irritation of the nasal branches of the fifth nerve and aggravated if there is also sinus involvement. Acute rhinitis with excessive congestion and intranasal swelling, especially if sinusitis coexists, may cause neuralgia, and in the later stages, when there is purulent discharge with obstruction, transient neuralgic pains are not infre-



quent. While slight irritation of the nose may cause enough nervous instability to give rise to neuralgia, in the majority of cases, as shown by one reported by Lermoyez, actual nerve changes are present. Neuralgia from maxillary sinus disease is probably less frequent than that from frontal sinusitis, though the nerves are more exposed. The pressure from retained morbid secretion, owing to the anatomic conditions, is rather less common than in frontal sinus disease, but any severe facial pain should direct attention to the maxillary sinus. Acute inflammation of the frontal sinus is always accompanied with headache and often with severe neuralgia. In all forms of frontal sinusitis, from whatever cause, supraorbital neuralgia of the affected side is not infrequent. Rarely the pain is occipital and then the diagnosis is liable to be confused. Empyema of the ethmoid cells is more likely to cause headache, but may give rise to occipital and frontal neuralgia, and the latter may be due also to sphenoidal sinusitis, though here also headache is most common. Lastly, he mentions neuralgia associated with combined or multiple sinusitis and intranasal disease, which is the most bizarre and confusing of all. One can not be sure in these cases of its relation to any particular changes in the nose or sinuses until all the affected parts have been approximately restored to their normal conditions. Illustrative cases of neuralgia from the various forms of nasal disease are reported.

#### PATHOLOGY OF BILE.

W. SALANT, New York (*Journal A. M. A., Sept. 8*), reviews the literature as to the changes observed in the bile in various pathologic conditions. It is decreased in febrile states, apparently more from functional derangement than from structural changes of the liver. It seems also to be diminished in malignant disease. The pigmentary changes have been considerably noticed and a wide range of variation in color has been observed in certain forms of disease. If the enterogenic origin of urobilin from bile pigment is accepted, its presence in large quantities in the urine in so many diseased conditions may serve as a proof of the increased formation of bile pigments in disease. Abnormal constituents of bile have been determined in various pathologic conditions, such as dextrose, urea, albumen, etc. Albumenocholia has been observed in cloudy swelling of the liver of pneumonia, tuberculosis and sepsis, in various experimental intoxications, etc., but the subject does not appear to be fully cleared up as to the origin of the albumen, whether it is eliminated by the liver or due to inflammation or irritation of the gall bladder and passages. The toxicity of the bile in pathologic conditions is noticed. Pouchet claims to have isolated the poison of toxic bile in cholera and finding it in the nature of a pyridin base. Meltzer and Salant have found the toxicity of the bile increased after double nephrectomy, the exciting element predominating.

#### FEMORAL HERNIOTOMY.

A. J. OCHSNER, Chicago (*Journal A. M. A., Sept. 8*), claims that all that is required in treatment of femoral hernia with the normal circular opening of the femoral canal is to dissect out carefully the hernial sac quite up into the peritoneal cavity beyond the inner surface of the femoral ring, ligate it high up, cut it off, and permit the stump to withdraw within the peritoneal cavity. Removing all the fat contained in the

femoral canal and simply closing the skin wound completes the operation. The method is based on the well known fact that it is practically impossible to keep a circular opening in any part of the body from closing spontaneously unless it be lined with a mucous or serous membrane. In cases where the opening is congenitally not circular or is torn in traumatic hernia, or is cut in strangulated cases, this method is of course not indicated. He has used this method constantly for fourteen years and finds that, barring unusual accidents, recurrences do not happen. He tabulates the cases thus operated on from which he has been able to obtain definite reports, thirty in number, and in none of these was there a recurrence. He reviews the principal features of the more important methods used in femoral hernia, some of them in detail, and concludes that every one of them that does not utilize the principle here emphasized of leaving the femoral canal in the form of a circular opening, is faulty.

#### SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.

While surgery is admittedly contraindicated in many cases of exophthalmic goiter, F. J. SHEPHERD, Montreal, (*Journal A. M. A., Sept. 1*), maintains that in a certain proportion operative measures are curative or lead to decided improvement. The probable cause is hyperactivity of the thyroid, but the part played by the thymus and other causes in this disease complex can not be entirely ignored. Shepherd thinks that early operation is safest and that the class of cases most likely to be benefited are not the most severe ones, but those in which the gland is more enlarged on one side than on the other, with more definite tumor formation, and in which the gland is not excessively vascular and the enlargement has preceded the symptoms by years. In those early cases of enlarged thyroid with mild symptoms in which the gland is soft, vascular and evenly enlarged throughout, the results or operation are usually good. With large vascular thyroid and symptoms of marked toxemia from thyrotoxicosis operations should be avoided. He notes the disinclination of most physicians to operate and gives statistics from various operators showing good after effects and low mortality. Nor does he consider general anesthesia as specially dangerous in selected case. Fourteen cases of his own and three of certain of his colleagues are reported. There were three deaths, all in desperate cases, nine complete cures, three patients were much improved, one relapsed and one has been lost sight of though improvement followed operation. Sixteen of the patients were females. In all, the operation was called for on account of distressing symptoms. The diagnoses were clinical. He does not believe the pathology of the disease is sufficiently definite to make the microscopic examination of first importance.

#### SURGERY.

##### OPERATIONS DURING PREGNANCY.

BENJAMIN (*JOURNAL of the Minnesota State Medical Association, July*), concludes a paper on "Some Indications for Surgical Operations During Pregnancy" as follows:

1. All pregnant women who have had any former abdominal disease, or who have unusual symptoms during the pregnant state should be carefully examined, and their former histories studied for any abdominal or pelvic disease which might interrupt pregnancy or endanger the life of the mother.

2. By a careful investigation of the statistics and from personal experience I believe that operations when carefully performed upon a pregnant woman,

do not necessarily cause the uterus to expel its contents, nor do they when indicated result in additional danger to the patient. On the contrary, they may be life-saving by removing a diseased organ before walled-off microorganisms break through the enveloping membrane, and the poison is disseminated throughout the abdomen; or from pressure, pain, etc., uterine contractions expel the fetus.

3. Disease of the tubes or ovaries, and adhesions or growths interfere with the normal expansion of the uterus, and may demand a surgical operation before the expiration of the normal gestation period.

4. Appendicitis should receive the same consideration during the pregnant state as under other conditions. There is far more risk for the patient when a diseased appendix is allowed to remain than if it is removed during the pregnant state. The disease itself is a greater factor in the production of abortion, and an operation adds little to such a possibility.

5. Fibroids, because of their location, may obstruct the pelvic opening or produce pressure upon the bowel, bladder, or pelvic tissue, resulting in adhesions and pain, and possible bowel obstruction. They may degenerate and cause infection. Many pregnant women should have fibroids removed early to avoid disastrous results.

6. Ovarian tumors, the nature of which cannot be definitely determined, can be safely removed with fewer risks to the mother or child in the average case than when allowed to remain.

7. Other surgical conditions arising during the pregnant state should be carefully considered, and a conservative form of treatment adopted, which often means a surgical operation before the period of labor.

## PEDIATRICS.

### ENERGY IN FOOD.

PISEK (*Post Graduate*, July, '06) in a paper read before the Pediatric section of the American Medical Association on "Some Unheeded Principles Involved in the Dietic Management of Infants in Hot Weather" calls attention to intangible ingredients embodied in the food, namely energy. This element when utilized is transformed into heat and removed from the body as such. Heat then is as much an excretion of the body as is urea and should be as much considered. Body heat is excreted by conductive radiation and evaporation. In cold weather radiation serves to remove most of the heat but when this means is insufficient sweating comes into play—evaporation is influenced by relative humidity, hence a relatively low summer temperature with high humidity is more trying than a much higher temperature with low humidity as in the latter case evaporation is favored. Much heartier food can be safely taken in hot dry localities following digestive disturbance than is safe in cooler but more humid localities. The writer ends his article with the following conclusion:

1. In warm weather keep a light woolen garment over the abdomen to prevent sudden chilling of the skin and consequent heat retention by suppression of perspiration.

2. Bathe infants twice daily.

3. Give plenty of cool boiled water to drink, to replace that lost by evaporation.

4. Pasteurize the food to retard its decomposition.

5. If the weather is close or muggy, or the humid-

ity is high, dilute the food to one-half with boiled water. In very humid weather, with high temperature, stop milk altogether, and feed gruels until the humid condition is past.

6. On warm humid nights do not give milk feedings, because the humidity is higher at night than in the day time.

7. For diarrhea give calomel or castor oil to eliminate decomposing food. Stop all milk feedings temporarily. If the air is hot, but dry, milk feedings may be resumed quite rapidly. If the relative humidity is high, feed gruels to reduce heat production and also to starve out putrefactive bacteria and cautiously get back the milk feedings.

8. Provide a circulation of air, as stagnant air soon becomes saturated with water vapor and no more perspiration can evaporate and absorb heat.

### CLEAN MILK.

The question as to which is the best milk for infants and children, next to mother's milk, has passed through various stages of discussion. The most available milk in this country is that of the cow; and sterilization by means of heat was applied to it as soon as the bacterial cause of the enteric disease of childhood was understood. This process has undergone much the same change as the contention for absolute asepsis in surgery has; it has been found that it is quite impossible to eliminate all bacteria, that a few micro-organisms do little or no harm, and that to kill all the bacteria inflicts damage upon the environment in which the bacteria live. So pasteurization wrought deleterious changes in the milk; and effort simply to minimize the number of bacteria has been followed by such astonishingly good results that it signalizes one of the great advances in preventive medicine. Certified milk has resulted from this knowledge; and the demand for this milk is increasing beyond the supply. The sensitiveness of the urban infantile intestine is destined to exert a powerful influence for good upon the rural barnyard; and the farmer is beginning to wash his hands, just as the surgeon did twenty years ago.—*N. Y. State Journal of Medicine*.

### TREATMENT OF INFANTILE DIARRHEA.

WILLIAM AYRES, of Brierley Hill, Staff., states that he has found the following to be the most satisfactory method of treatment for the summer diarrheas of infants: First, administer a purge consisting of castor oil, rhubarb, calomel, or saline. In his experience the last two are the most efficacious, 1-10 grn. of calomel being administered every half hour for at least four doses, and sometimes until the motions assume a bilious hue. The saline is given in this manner: Dissolve 2 teaspoonfuls of magnesium sulphate in a teacupful of warm water, flavor with a little lemon, and then give two teaspoonfuls of this mixture every twenty minutes until the bowels are well cleared. Where the motion is of a dysenteric character, the colon must be flushed out with some weak antiseptic solution.

So far as medicinal medication is concerned he has had the most brilliant results with copper arsenite, given in doses of 1-1000 grn. to 1-100 grn. every ten minutes for from four to six doses, and then every two hours. A most useful method for removing the fetor of these cases is to give the sulphocarbolates of zinc, soda, and lime, of each  $\frac{1}{2}$  grn.; if given in combination with bismuth, the bismuth will no longer blacken the motions, but the sulphocarbolates must be of the purest description or they will produce vomiting and other undesired effects. He finds the subgallate or salicylate of bis-







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President of the Vermont State Medical Society.



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## ORIGINAL ARTICLES.

### PREVENTIVE MEDICINE.

*By Bingham H. Stone, M. S., M. D., Director of the State Laboratory of Hygiene, Burlington, Vt., Professor of Bacteriology, University of Vermont College of Medicine.*

"An ounce of prevention is worth a pound of cure" is a homely expression for a great truth and can appropriately be taken as the text of a discussion on this subject.

Preventive medicine is a term which has only recently found a place in our vocabulary and is used synonymously with sanitary science, public or state medicine. It may be defined as an applied science which deals with the preservation of the health of an individual and community.

If we limit our search into history to the last few hundred years we are apt to consider this branch of medicine as a recent development. Great knowledge has come to us during the last two or three decades and with it great development has been made, but for the seeds of this growth we must turn the pages of history until we come to the earliest chapters. Here in a desert, limited by rugged mountains on every side, we find a marching host of six hundred thousand fighting men with their women and children, all in the vigor of powerful manhood, their muscles hardened by a thousand marches. These are the sons of Israel. Their splendid health and vigor is accounted for by the wonderful set of hygienic regulations contained in the law of Moses. We can easily see the divine wisdom in the minute details laid down in this first law relating to health now extant and we can but wish that human legislators would always apply the same wisdom to their measures adopted for the protection of the more complicated society of to-day.

The pious Israelite was commanded to observe frequent purification and cleansing, to isolate those suffering from contagious dis-

ease; to disinfect houses where the plague had prevailed, to destroy infected articles, to avoid the use of unwholesome food and in short was instructed in almost every detail of personal and public sanitation which is in force to-day, after the lapse of centuries.

As these are the first health laws so the priests of Israel are the first recorded health officers, appropriately directing the moral and physical development of their flock. Realizing that a nation to be prosperous and powerful must be composed of healthy and vigorous men and women, this was the keynote of their victorious progress.

This was the era of personal hygiene, sufficient for the simple life of a wandering people. As life became more complex and population was segregated in larger masses mere personal hygiene was not sufficient and we find in Italy a city meeting the changed condition. In the glorious days of ancient Rome upon the steps of a beautiful temple side by side with equal honor stood statues of Esculapius, the God of medicine and Hygenia the Goddess of health. And here in Rome with her magnificent streets and her lavish water supply furnishing to each man, woman and child three hundred and twenty-two gallons per day of the purest water brought from the mountains sixty miles away; with her free baths of crystalline purity and her sewers in which ships might sail we see an example of municipal sanitation which might cause some American cities to blush with shame. That the Roman of Rome's golden days appreciated in full the influence of this sanitary administration upon his personal prosperity and natural greatness is amply proven by the picture which history gives us of the triumphant parade of Fronto- nius, the consul of waters on his annual tour of inspection of the city's twenty great aqueducts.

Our German ancestors were not ignorant of the value of sanitation. Theodoric the Ostrogoth, is pictured to us sentencing the city fathers of Ravenna for allowing the elaborate sewers and aqueducts with which the city was once provided to fall into ruin thereby "con-

verting the beautiful meadow which once surrounded the city into pestilential swamps and causing much sickness and many deaths." He remarks in his charge that the fame of the city has been sullied and its trade and commerce greatly diminished. Here we may see an example of national sanitation with the authority vested in the Emperor. In this history of Ravenna we are forcibly reminded of analogous conditions in some of America's fairest cities. A Theodoric could profitably fill his road gangs in America we fear.

From this time on sanitation, with civilization in general, takes a downward trend and as a result we find the world ravished with pestilence and disease. England was the first to arouse from its lethargy to the necessity of sanitary reform. This awakening was a part of the general upward striving of the Renaissance. Curiously enough reforms did not come through any alarm concerning the health of the common people but as a result of an investigation of prison conditions. John Howard first called attention to the condition of the prisoners "in dark subterranean dungeons reeking with pestilential effluvia." The English conscience needed only to be aroused and John Howard painted a picture which could not fail to have this effect. It was made evident that many epidemics which spread through the entire island had their origin in these filthy dungeons. Gradually the fatalistic belief in disease as being a punishment of men for their sins disappeared. With the rapid growth of municipalities which was taking place about this time as a result of industrial development, epidemics of typhus, cholera and small pox could be no longer unnoticed by the growing altruism of a progressive nation.

One of the earliest of England's practical sanitarians was a lawyer, Edwin Chadwick, who began the study merely as a question of statistics. As this labor progressed a new train of reasoning came into his mind which he called the sanitary idea. It was in his own words "the idea that a man could by getting at first principles and arriving at causes which affect health, mould life altogether into its natural cast and beat what hitherto had been accepted as fate, by getting behind fate itself and suppressing the forces which led up to it as their prime source." Chadwick succeeded as his first step in having in 1836 the registration law passed which required the

registration of deaths with causes, thus establishing a basis for study and deduction. Dr. Richardson, Chadwick's biographer, said of this law, "the proverb that pestilence walketh in the dark is no longer true, pestilence reassured and registered walketh at last in the open day."

Growth of sanitary authority has always come through acquirement and diffusion of knowledge. As long as no one knows how many persons live in a particular locality, how long they live and of what they die, there can be no general recognition of sanitary evils or the necessity of their correction. Sanitary reform can only follow campaigns of education.

The years from 1816 to 1840 saw Europe successively swept by typhus fever, relapsing fever, typhoid, small pox, Asiatic cholera and Russian influenza.

One of the bright things in the gloomy history of epidemics of disease is the progress in sanitation which almost invariably follows. In this way every wide spread prevalence of disease saves through the discoveries of preventive medicine made possible by the opportunities of study which it offers, thousands of future lives, and makes the struggle for existence for future generations a little less precarious.

This period of suffering in England bore fruit in added study of sanitation, and through the influence of Chadwick's report on the "Health of the Laboring Classes" and the "Graveyards of London" presented to the home secretary, the Prince consort was interested and the first royal health commission was appointed, thus ushering in a period of sanitary legislation in England.

Scientific research into the cause and prevention of disease began to be taken up in earnest about this time and soon began to bear fruit. Jenner was making his far reaching studies of small pox and Pasteur "the poet of the unseen" was commencing his work which was to result in the establishment of the germ theory which has absolutely transformed medical and surgical practice during the last quarter of a century; giving a practical working basis for the isolation of contagious diseases resulting in a reduction of the prevalence and mortality to an extent beyond the most sanguine dreams of the early apostles of the doctrine. Up to this time all sanitary study and legislation was but a groping in the dark. The sanitarian had to fight an unseen, un-



known foe and it is only strange that more of them did not yield to superstition and dread. From the time of these discoveries the fight was with something tangible,—a struggle in the light with a known foe.

The establishment in Paris of the institute bearing the name of Pasteur is a monument of a nation's appreciation of his work. He is a conqueror whose glory is as incalculable as the good he has accomplished.

The discovery of the specific organisms of tuberculosis, diphtheria, typhoid fever, malaria, pneumonia, septicemia, pyemia, and gonorrhoea have followed in quick succession the work of Pasteur. And with the knowledge of the etiological factors of these diseases comes as a matter of sequence the knowledge of their isolation and prevention.

It has been proven that high mortality, in an urban population at least, depends largely upon preventable features of an unsanitary character. So complete is the knowledge of cause and means of prevention of communicable diseases and so definite the legislation on these subjects that the sanitarian of to-day has it in his power to control to a great extent the death rate from these causes.

A study of comparative statistics proves to us that these health authorities have been worthy of their responsibilities. The following figures taken from the vital statistics of New York City and presented by Dr. Biggs in a paper before the American Medical Association are fairly representative of what has been accomplished in other American and European cities.

The expectation of life at birth in New York city in 1866 was little more than twenty-five years, while in 1903 it was forty-two years. For the seven year period ending in 1873 the death rate under five years in New York city was 123 per thousand of the population at these ages. For the year 1903 the death rate under five years was fifty-six. On the present estimated population this reduction equals a saving of 28,000 lives annually. In old New York, comprising the borough of Manhattan and the Bronx for the seven year period ending in 1873, 616 out of every one thousand children born, died during the first five years of life. As computed by the death rate under five years in 1903, 280 would have died during the same five years. Bigg's figures from the death rate up to 1873 as com-

pared with the death rate of 1903, that over 50,000 lives are saved in New York alone annually of those which would have been lost if the population in New York to-day was under the same conditions as at that time.

Other factors undoubtedly enter into this lowered mortality rate but no one can doubt that improved sanitation is the major cause.

The health officer to-day has profound responsibilities but with his added duties go definite rules of procedure.

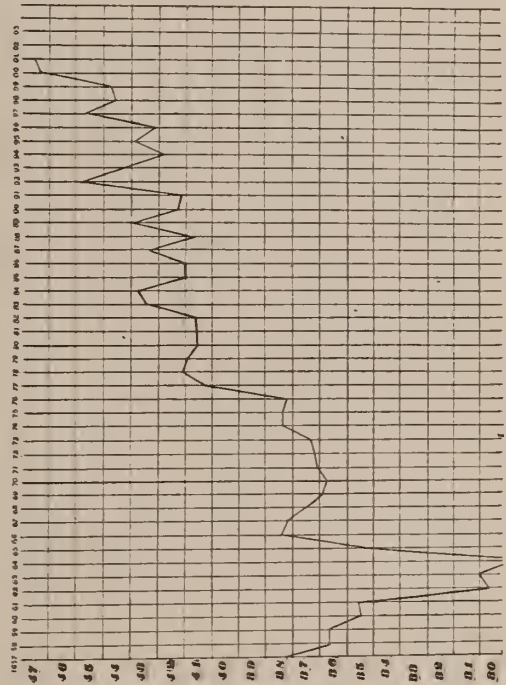


Table Showing Increase in Longevity in Vermont.

The deep seated dread of disease engendered by centuries of suffering is strikingly manifested by the way in which public health legislation has followed increased knowledge of preventive medicine. Since the first comprehensive health laws were enacted in England the statute books have been filled with legal enactments on this subject. Now every state has its board of health and its local health officers and the power given to these boards is almost absolute. The charter of the city of New York says: "In presence of great and imminent perils to the public health, by reason of impending pestilence it shall be the duty of the Board of Health \* \* \* to take such measures to do and order and cause to be done such acts and make such expenditures for the preservation of the public health as it may in

good faith declare the public safety and health to demand." Broad powers to delegate to any body of men and powers which might in the hands of wrong persons easily descend to tyrannical regulations.

In our state the health authorities have powers quite as broad. The Vermont law says:

"The State Board of Health shall have authority to promulgate and enforce such rules and regulations for the better preservation of the public health in contagious and epidemic diseases as it shall judge necessary, and also regarding the causes and prevention of disease, and its development and spread." It shall have authority to "issue to the local Boards of Health its regulations as to the lighting, heating, and ventilation of school houses, and shall cause sanitary inspection to be made of churches, school houses and all places of public resort, and make such regulation concerning the same as it shall deem necessary for the safety of persons who may attend schools or services therein or resort thereto. And all school houses, churches and public buildings hereafter erected shall conform to the regulations of said State Board of Health in respect to all sanitary conditions, including fire escapes, necessary for the public health, and for the safety and security of individuals in such public buildings, the method of heating, plumbing, ventilation and sanitary arrangements."

"The State Board of health shall have the general oversight and care of all waters, streams and ponds used by any cities, towns, villages or public institutions or by any water or ice companies in this state as sources of water supply, and of all springs, streams and water courses tributary thereto.

Said board shall have authority to prohibit any town, city, village, public institution, individual or water or ice company from using water or ice from any given source whenever in its opinion the same is so contaminated, unwholesome and impure that the use thereof endangers the public health." "It may make rules and regulations to prevent the pollution and to secure the sanitary protection of all such waters as are used as sources of water supply."

To the local sanitary officers are given even greater executive powers.

"The health officer shall make sanitary inspections whenever and wherever he has reason to suspect that anything exists which may be detrimental to the public health. He may enter any house or other building for the purpose of making such inspection, \* \* \* \* order the destruction, prevention and removal within a specific time, of all nuisances, sources of filth or causes of sickness as directed by the local board of health, and may, under the orders of the State Board of Health, order all churches and schools to be closed, in times of epidemic or in the face of serious sickness which in his judgment may require the same, and may forbid and prevent the assembling of people in any place when the public health and safety remand the same."

Local boards of health shall have power and authority: "To abate all nuisances affecting the public health, destroy, prevent or remove all sources of filth and causes of sickness."

"To guard against the introduction of contagious or infectious diseases by the exercise of proper and vigilant medical inspections and control of all persons and things arising in their respective towns or cities from infected places, which from any cause are liable to communicate contagion. They shall have authority to take to isolation hospitals at the expense of their respective towns or cities small pox patients who in the judgment of the local board of health are not properly quarantined or cared for."

"To require the isolation of all persons and things infected with or exposed to contagious or infectious disease, to provide suitable places for the reception of the same, and if necessary to furnish medical treatment and care for such sick persons, at their expense if of sufficient ability to pay, otherwise at the expense of the town or city; to prohibit and prevent all intercourse and communication with or use of infected premises, places or things; and require, and if necessary, provide means for the thorough purification, disinfection and cleansing of the same before intercourse therewith or use thereof shall be allowed. The local board may call upon all sheriffs, constables and police officers to assist them in the discharge of its duties.

To require every person owning a dwelling house or other building abutting on the public street in which there is a public sewer, to



have all drains and sewers from said house or building connected with such street sewer.

\* \* \* \* \*

In the presence of great and imminent peril to the public health by reason of impending pestilence, it shall be the duty of the local boards of health under the directions of the State Board, to take such measures to do and cause to be done such acts and make such expenditures for the preservation of the public health as the public safety shall demand."

Enough has been said to show with what universal power the state system of preventive medicine has been endowed. Are these powers such as to render the health authorities splendidly efficient or meddlesomely officious? Probably no powers sufficient to secure efficacy are free from the danger of being used tyrannically hence the personnel of these men is of the utmost importance.

Very little can be added by legislation which will increase the efficacy of modern municipal and state sanitation. Many things are yet to be learned regarding communicable diseases which will lessen their prevalence, but the added accomplishments of preventive medicine in the future depend not so much on the sanitary official as on the cooperation of the practicing physicians. They are the teachers who must carry on the campaign of education among their families even when it seems that they are working directly against their own interests in so doing. No sanitary official can come into such intimate personal contact with the people of a community as the general practitioners. They usher into the world every new citizen and in a measure, watch over and direct the physical development of almost every individual in the civilized state. Their opportunities for giving instruction in hygienic ways of living are unsurpassed—and the foundation of preventive medicine must always rest in personal hygiene and sanitation. The physically well developed man or woman is best able to resist infection. Epidemics of infectious disease invariably have their origin and gain their impetus in unsanitary, ill kept homes among individuals whose resistance is lowered by the ignorance fostered conditions.

The general practitioner has a very definite duty in the education of the patient and his family during and after infectious diseases.

Typhoid fever is acknowledged to be a preventable disease. Infection comes through

food or drink polluted with the discharges of some previous case of typhoid. It is not a contagious disease and hence does not justify quarantine. The responsibility for its management rests on the physician in charge. It devolves on him to see that the discharges are disinfected. If this was always done thoroughly the disease would soon become a rarity. It is generally known that 20% of typhoid fever cases recover from the disease with an infected bladder in which the bacteria may persist for months, yet how many practitioners take the precaution to secure urinary disinfection or warn their patients of their possible danger to others. These cases are much more dangerous as spreaders of infection than the patient confined to the house.

In the case of diphtheria we have a means of rapid diagnosis in cultural methods which it devolves on the physician in charge to take advantage of. In periods like the present when the disease is somewhat prevalent every case of sore throat should be cultured. Undoubtedly there are many mild cases which can be diagnosed in no other way and these are the most fruitful sources of spread as they come in contact with many others. In diphtheria we have the advantage of being able to ascertain very definitely when the case ceases to be dangerous to others. This disease requires a strict quarantine which should only be broken after two cultures taken carefully by swabbing the whole throat have been found negative. These cultures should be taken two days apart. If there has been any nasal involvement cultures should also be taken from the posterior nares. In this state this usually is one of the duties of the physician rather than the health officer. Quarantine is necessarily a hardship. An infringement of the sacred right of the individual made necessary for the safety of the many. Only the most unreasonable will protest against its enforcement during the active course of the disease but many cannot understand why they are sometimes kept prisoners weeks or even months after all symptoms of diphtheria have disappeared. Here it is the duty of the physician to make plain to them that antitoxin treatment brings to an abrupt close the clinical symptoms of neutralizing the poisons produced by the bacteria but that it does not kill the germs and that the length of time which they remain in the throat represents the period during which

the person would have been sick without this treatment.

Tuberculosis cannot as yet be quarantined but our laws require cases to be reported and it is the physician's duty to aid the sanitary officers in the campaign of education which is being carried on.

Scarlet fever should be early reported and strictly quarantined, so with the other infectious and contagious diseases.

Sanitarians are at a loss regarding the management of syphilis and gonorrhea. No one can doubt that these diseases should be under sanitary control but the difficulties are great. The medical practitioner can do much in educating his patient regarding the seriousness of the disease, more probably than can be accomplished in any other way. Isn't it true that the general idea of the trivialness of gonorrhea is largely due to the way in which some physicians treat the disease as a joke? When medical teachers make the remark in public that "it requires three doses of the clap to graduate a medical student" what can be expected?

The circular of information adopted and advised for distribution by the Conference of State and Provincial Boards of Health of North America is a long step in the right direction. It should result in great good but for its success it requires the cooperation of every physician.

Preventive medicine has accomplished much and remains to be accomplished. Its failures as I have suggested are partially due to the lack of cooperation between the practicing physician and the sanitary officials. This is a condition which will gradually be remedied.

Modern medical teaching must recognize this branch of medicine in the future more generously than it has in the past and the institution which sends out graduates unfamiliar with the fundamentals of preventive medicine has failed to meet its obligations and is not abreast of the times. The increase of knowledge of sanitary methods and the enlargement of the scope of sanitary authority call more and more for expert training in this special line. The Doctor of Preventive Medicine of the future must be as much of a specialist as the surgeon or ophthalmologist is today; but like him he should first be well grounded in the fundamentals of medical science.

Preventive medicine has had a brilliant past especially in the last two decades but we can safely predict that with its better facilities and more perfectly trained men, more brilliant achievements lie in the near future. Knowledge of infectious diseases has come so thick and fast that it is confusing and part of the work of the coming years will be to coordinate and make available the scattered facts which have already been proven.

Preventive medicine will never injure the practitioner for a nation free from epidemics of infectious disease is much better able to pay its physicians to keep its people well than is one poverty stricken by means of these disasters. This branch of science presents a promising field for the young medical graduate of the future. Most of its work is not spectacular but is done quietly and hence is apt to be little rewarded by notoriety. It does not bring one the immediate gratitude which it is the lot of the physician to receive from his case brought through a dangerous illness, for people do not realize a danger averted as they do a danger passed through yet gradually appreciation is bound to come to the guardians of the public health.

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### ERYTHEMA NODOSUM.

*By W. L. Wasson, M. D., Assistant Physician and Pathologist at Vermont State Hospital for Insane, Waterbury, Vt.*

Erythema Nodosum is an acute inflammatory affection of the skin, running a course of two to six weeks, or longer, and characterized by raised, red, painful nodules, symmetrically arranged and of various sizes, from that of a pea to a pigeon's egg.

Etiology. It occurs most frequently in young children and females, most generally in those who have suffered for sometime from physical depression. Spring and autumn are the most favorable months for its appearance, although the four cases observed by the writer occurred in December. The cause is indeterminate, but consensus of opinion holds it to be some form of an infection. A. Schentze cites a case of diphtheria in a woman, which in the tenth day became complicated with typical erythema nodosum. It is associated at times with rheumatism, and malaria has been



brought forward by Boicesco as a causative factor. A number of observers have noticed a relationship between tuberculosis and this disease, the more so as it commonly selects the weakly and ill nourished.

Bacilli, recovered from the nodules, when inoculated into the abdominal skin of guinea pigs have produced erythematous nodules, which have become gangrenous. Several instances have occurred where the disease has appeared in a number of individuals closely associated, suggesting contagion. By some it is considered to be merely one of the phases of erythema multiforme. Others are as strong in clinging to a belief that it is of rheumatic origin alone, and in many instances a history of rheumatism can be obtained. In the four cases appended below, no history of rheumatism could be elicited. Springing as they did from a clear sky where sanitation was of the best, namely, in a hospital, and all being typical cases, they strongly urge upon one's consideration the probability of their being caused by some specific infection. There developed in another hospital employee, at about the same time, articular rheumatism of the elbow, which ran an uncomplicated course.

The following cases present the symptoms in a fairly typical form:

CASE I was that of a female nurse, aged 21, who applied to the doctor because several very tender and painful lumps had appeared on the legs. On examination several dark, red nodules were found on the anterior aspect of the legs, scattered from the knee to just above the ankle. They were about the size of a split English walnut, elevated, firm and tender to the touch and shading off gradually into the surrounding tissues. A week or so prior to the appearance of the nodules, the patient had felt lassitude, debility, and had suffered more or less from insomnia, anorexia and some headache. Systemic disturbances were not marked and consisted chiefly in a slight accentuation of the symptoms which preceded the appearance of the nodules,—lassitude, anorexia, insomnia and slight fever. Associated symptoms were the pain and discomfort caused by the nodules. The pain was especially marked when walking because necessary. The feeling of lassitude and discomfort seemed to be more marked every other day. The limbs were bandaged and a tonic administered, re-

sulting, after several weeks, in complete recovery.

CASE II. Also a female employee, aged 32, appeared about a week after the onset of the first and presented about the same history, except that her symptoms were more severe. Her lassitude, anorexia, insomnia, headache and depression of spirits had been marked for two or three weeks before any nodules appeared. The nodules were scattered anteriorly below each knee to the number of a dozen or so on each leg, and two small ones appeared on the arm,—one below the elbow and one just above, posteriorly. Moderate fever obtained and as patient was unwilling to remain in bed, after a few days the inflammatory reaction about the nodules became much accentuated and systemic disturbance extreme, temperature  $105^{\circ}$ , pulse 100. Syncope developed while patient was at stool. Violent headache and extreme pain of the inflamed points on her legs prevailed. Some of the spots were much enlarged, probably by the fusion of several nodules, (Gotthiel says they never fuse) being fully three inches across. Obstinate constipation was the only digestive disturbance, aside from the anorexia. After a week or so the inflammation had left the involved areas, whose coloration went through phases somewhat similar to those appearing in a disappearing ecchymosis, but to a much less degree.

After the first crop of nodules had well nigh disappeared, in about ten days, she sat up and immediately suffered a relapse from which recovery was slow and tedious. Temperature remained nearly constant at  $100^{\circ}$  for about a week and then fell very gradually for a week or more, finally reaching the normal where it remained.

As mentioned above, obstinate constipation was a marked feature and during the latter part of her illness pains in the knee joints caused some annoyance. The urine in neither of the two cases cited showed anything important. For a long time after leaving the bed, the sites of the recent inflammation would turn purple when the limbs were dependent. The duration of the case was about five weeks.

CASE III in an insane female patient was not observed until the blotches were well out. They were numerous on the legs, hips and lower parts of thighs. Temperature at first was  $102.6^{\circ}$ , next morning  $98^{\circ}$ , from which it

gradually rose during the next three days to 100°, where it remained for four days and then fell in a few days to normal.

Constipation was also very marked in this case. No relapses occurred although blotches kept coming out for several days after the onset, until several dozen appeared on each limb.

CASE IV, also a female employee, aged 21, was of particular interest in that for some two weeks prior to the appearance of the eruption she complained of a peculiar distress after eating. It seemed to her as if her food stopped at the lower end of the oesophagus for a brief period and then passed on. This was accompanied by distress to such an extent that she could take only liquid food, and even that caused her much discomfort. After the food was once in the stomach the distress ceased. Anorexia, languor and insomnia were features for some two weeks before the eruption appeared, and two days before this she complained of sore throat. The spots appeared about the knees and anterior aspect of the legs, few in number at first, but they kept coming out the first day or two, until a dozen or so appeared on each leg and hip. The temperature would rise a little each time a fresh crop developed. After being in bed a week her temperature fell to normal and the nodules had largely disappeared, except for a darkish appearance of the skin, (involving the recently inflamed areas) which assumed a purplish hue whenever patient stood erect. After remaining up a week feeling miserably, especially during the morning hours, suffering from pains in all her joints, at times being unable to raise her arms sufficiently to dress her hair, she suffered a relapse with a re-appearance of the nodules on legs, hips, thighs, and a few very small ones on the forearms and arms. The spots on the forearms never amounted to more than a faint blush with scarcely any in duration, and subsided in a day or two. This patient has refused to remain in bed as requested, and as a consequence the eruption has persisted and her general condition has failed to improve. At the present writing (some six weeks since the onset of the trouble) she still feels reduced in strength and spirits and still suffers from the appearances of fresh areas of inflammation.

The pathology of this condition, as described by Unna is largely confined to the blood vessels, which are dilated and filled with stag-

nating blood or white thrombi, composed of leucocytes. The perivascular space is densely packed with cells, partly leucocytes and partly swollen spindle cells in a state of mitosis. He reports no plasma cells. Aside from a scanty proliferation and general swelling of the spindle cells of the cutis, this structure is but little more cellular than usual. Immigration of leucocytes into the epidermis is very slight, and this structure is little affected, except that cells swell, lymph spaces widen and mitosis is abundant. The infection is confined to the perivascular space and causes only slight emigration and cell proliferation, but marked oedema and disappearance of the elastic fibers. It is this oedema which spreads from the much dilated spaces about the vessels in diminishing quantity into all the lymph spaces of the cutis, which brings about the swelling necessary to cause the nodules. The elastic fibers of the cutis remain intact, and this explains why the skin so easily recoils to its normal condition at the subsidence of the inflammation. Mast cells are present within the cell groups and their neighborhood, but are not abundant. The discoloration which persists for a brief period after the inflammation subsides is believed by him to be due to the breaking up of hæmoglobin within the blood vessels in the stagnating blood current before and behind the thrombi. Atkinson of Baltimore believes it to be an overcrowding of blood and lymph vascular spaces with an exudation of both white and colored cells. Kaposi regards the nodules to be nothing more or less than fully developed and stable urticarial weals.

In making a diagnosis it is necessary to exclude contusion, gumma, abscess, furuncle and inflamed varices. The marked constitutional disturbance and the absence of a history of physical violence serves to eliminate contusions. The nodules are too acute in their course and too tender for gumma; high color and multiplicity obviate abscess, and their larger size distinguishes them from furuncles. Inflamed varices may be felt as hard, tender cords unaccompanied by constitutional disturbance. Sajous states that "cutaneous manifestations reproducing with absolute fidelity the clinical type, erythema nodosum, are met with in the course of syphilis. This erythema may be due to a coincidence and may result from some infection superadded to syphilis itself."



Of great assistance to diagnosis is the tendency which the nodules have of appearing about the shins, although, less extensively, other areas may be involved, such as the thighs, hips and arms, or even the trunk and face.

The prognosis is generally good, though relapses may prolong the condition for weeks. According to Sajous, death has rarely been recorded. Recovery in from two to six weeks is the usual course. Cases are reported where the infection process is very severe leading to vesiculation, pustulation and even gangrene.

The treatment is entirely symptomatic, having relation to the constitutional disturbances and the local inflammation. Fox ascribes the first importance to rest in bed and hot applications to the painful tumors. Rest in bed until the temperature has remained normal for a few days is very beneficial and seems to obviate in a large measure the great tendency to relapses. The diet should be mostly liquid, nourishing and easily digested. In the above mentioned cases it was necessary to pay particular attention to the bowels in order to keep them active. In view of the possibility of there being a rheumatic factor in its causation, the salicylates are advised. Acetanilid and phenacetine are beneficial in relieving fever and headache. Quinine has its advocates, and in the one case above where quinine was pushed to the limit the shortest course resulted. As local applications are mentioned lead and opium wash, solutions of the sulphite or hyposulphite of sodium, carbolic acid, and hot boric acid solutions. A. Browmlie strongly recommends ichthyol in the following prescription: R. Ichthyol Ammon, ʒii, Sp. Vini Rectif., Etheris aa ʒiii. Fiat Mist. Sig. Paint on lesions. Salophen in 15 grain doses were used in conjunction with the above. After subsidence of inflammation a tonic of iron, quinine and strychnine is very beneficial.

It is very interesting to note that the four cases presented occurred where such a condition had before been unknown, so far as the writer knows.

In reference to its being a manifestation of rheumatism inasmuch as the cause of rheumatism is still subjudice, and that of E. Nodosum still more so, and from the fact that its association with rheumatism is but a little more common than its association with other distinct disease, it is obvious that the exact classification of this malady is still a

matter for much observation and study. Unna places it among the neurotic inflammations.

### ECLAMPSIA.

By R. M. McSweeney, M. D., of St. Johnsbury, Vt.

I have been asked to read a paper before the Caledonia Medical Society, and being allowed to choose my own subject, I have chosen "Eclampsia." As the time is limited I have made the paper as plain and simple as possible. In my practice I have had two cases. A great many men have practiced a life-time without having a case as it occurs about once in every 350 cases.

Albumen occurs, varying in quantity in urine in about 20% of pregnant women. It may exist in a slight degree, especially if only during the later months without any marked ill-health, without being suspected unless the urine is tested. But in other cases where the quantity of albumen is great and begins to appear early in pregnancy the prognosis may be of the gravest character.

Pathologists are not fully agreed on this subject. The autopsy on patients who have succumbed to eclampsia shows conditions so various that they do not teach us much in regard to the true nature of the disease and often we remain doubtful whether the changes found should be looked upon as cause or effect of the disease. The brain is usually anemic and edematous and sometimes there is an extravasation of blood into the ventricles or at the base. Very frequently the kidneys are in a state of congestion, acute or chronic nephritis. Often the ureters are dilated but in other cases no trace of abnormalities is found in the uropoietic organs while in the liver are found hemorrhagic foci. Sometimes the muscular tissue of the heart is found degenerated. The lungs are edematous and inflamed.

### ETIOLOGY.

Many theories have been advanced to explain the outbreak of eclampsia, but so far none of them cover all cases. The disease is much more common in primiparæ than in those who have borne children before. It occurs preferably in the last months of pregnancy or during labor. As a rule it ceases after de-

livery. Frequently the ureters have been found dilated. Taking all facts together the theory has been advanced that the convulsions are due to pressure on the ureters, a theory that covers many cases but not those where the disease breaks out during the puerperium, when all pressure is removed and which is weakened by the fact that the ovarian and uterine tumors, much larger than the pregnant uterus, do not give rise to eclampsia. Some think the liver is at fault. Of late, the theory has been advanced that the disease is of microbic origin.

#### DIAGNOSIS.

The diagnosis of eclampsia hardly offers any difficulty.

#### SYMPTOMS AND CLINICAL HISTORY.

Previous occurrence of decided renal symptoms and general dropsy during pregnancy, especially signs of impending uremia; pupils dilated, rapid pulse and sometimes high fever. The actual convulsions may resemble epilepsy or hysteria. Text books give three varieties: Epileptic, hysterical and apoplectic. Hysterical attacks are slighter in degree, and consciousness is not entirely lost. Apoplectic ones are rare, and are followed by complete coma and paralysis, due to effusion, or a clot of blood within the cranium.

The typical puerperal convulsion is epileptic in character. It begins with rolling of the eyeball, puckering of the lips, drawing of the lower jaw on one side, bending the head back, twitching of the facial muscles, protrusion of the tongue, grinding of the teeth, clonic spasm of the voluntary muscles and of some of the involuntary ones, notably those of respiration.

#### PROGNOSIS.

Prognosis is very grave. The material mortality is at least 14% and the infantile twice as great. There is danger of apoplexy leaving her an invalid.

#### TREATMENT.

The treatment during the premonitory period is very effective. Future evil is averted by timely medication. Put the patient on to milk diet. If weak and delicate give tincture of iron, if restless and cannot sleep, chloral hydrate, grs. x, will have effect on al-

bumen. If the amount of urinary secretion or what is still more important the amount of urea, is abnormally small I prescribe,

Potassii acetatis

“ bitartratis

“ citratis aa ʒii

Decocti tritici to ʒ viii.

Shake well, teaspoonful four times a day. This acts as a diuretic and a laxative.

To cause abortion or induce premature labor, in my opinion, should never be resorted to unless the patient's life is endangered. If we see the patient first during the attack we give chloroform. The next step is to influence the nervous system in a more permanent way than by chloroform. For this purpose chloral, morphine, tincture veratri viridis, hyperdermically, Mx repeated every hour until pulse is soft reduces the fever. If there is much anasarca, the wet pack is very useful and may be combined with the above treatment.

A very important question is when labor should be induced. Some authorities want the uterus emptied as soon as possible. As a general rule it is advisable to deliver by forceps as soon as dilation of the os uteri will permit, but this is not by any means always required. Should the convulsions have been sufficiently controlled by other remedies, labor may go on to complete itself. If convulsions continue in spite of treatment the only port of safety is delivery. If the os is not sufficiently dilated for forceps to be applied it may be either incised or dilated with Barnes' bags, the other alternative of version by the feet being sometimes selected instead.

During the third stage of labor the placenta must be delivered without delay, clots removed and firm uterine contraction secured. Laxative, enemata, attention to the bladder, milk diet, and if convulsions still continue, morphine, chloral and bromide of potassium as before. Subsequent renal disease may exceptionally require treatment.

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Inflammations of the pleura are so often of tuberculous origin that it is well to treat all these cases as if they were actually tuberculosis. Hence after operations upon the pleural cavity an antituberculous plan of treatment should be pursued and the patient kept under observation for some time.—*International Journal of Surgery*.



## CONCERNING THE VALUE OF BLOOD EXAMINATION IN DIAGNOSIS.

*By Wm. G. Ricker, M. D., of Wells River, Vt.*

As a rule laboratory examinations are only confirmatory of a previous clinical diagnosis. For instance, one seldom discovers a nephritis from an examination of the urine which has not been previously suspected. Also the physical signs of the chest appear earlier and can be recognized as a rule before the bacilli are found in the sputum. In the case of the blood, however, new and unsuspected facts are often brought to light. Certain conditions are really impossible of diagnosis without a blood examination. To review briefly the constituents of normal blood, it consists of the clear pale yellow serum in which are held in suspension five millions of the red cells and six thousand of the white cells per cubic millimeter, the white cells being of the various types, large and small mononuclears, polynuclears, eosinophiles and transitional cells. The chief chemical constituent is the hemoglobin contained in the red cells. This is estimated according to an arbitrary standard based upon examination of the blood of numerous healthy adults of normal blood count, the standard being 100%, variations being estimated as 60%, 80% or 110%. A routine examination consists of a count of the red and white cells, a differential count of the various types of white cells and an estimate of the percentage of hemoglobin. Such diseases as pernicious anemia, chlorosis, the secondary anemias and the various forms of leukemia are thus recognized.

The most important, most frequent and most interesting to the general practitioner of all of these is pernicious anemia, or as it is otherwise called, primary anemia. This, on clinical examination only, is frequently confused with the different painless conditions of the gall passages, which produce jaundice, with obscure carcinomata particularly of the stomach, and with Bright's disease, and with a pronounced anemia which is secondary to some long continued drainage from the blood such as repeated hemorrhages from hemorrhoids, uterine conditions, etc. The blood picture in this disease is characteristic and conclusive and the diagnosis is usually positive, the condition being a reduction in the number of red cells and a reduction in the percentage

of hemoglobin, the reduction of the number of cells being the greater of the two, giving what is known as a positive color index. The white cells are also reduced in number to about four thousand. Characteristic changes also appear in a stained blood smear. The red cells are of varying sizes from one-third to twice their normal diameter and show marked irregularities in their outline known as poikilocytosis. A few, in pronounced cases, show a blue staining nucleus in their protoplasm. In cases of marked pallor and of jaundice the origin of which is obscure, in cases of marked shortness of breath where heart and kidneys appear negative and in all obscure cases of general weakness such an examination may and often does furnish very valuable facts, in fact the diagnosis itself.

Chlorosis is usually correctly diagnosed by the history and general appearance and examination of the patient. Here, however, there may be a marked reduction in the blood and yet the cheeks appear quite red and at any rate it gives one an accurate idea of the extent of the disease and an accurate gauge of the effect of the treatment and the rapidity of recovery. Here, in chlorosis the blood picture is different. The count remains high both of the red and white cells and the hemoglobin is reduced. We have not time to discuss the leukemias. We will simply say that one or another type of the white cells, other than the polynuclears appear in excessive number usually accompanied by a reduction in the number of red cells. This group of diseases is quite infrequent, is recognized only by blood examinations, but is one of those in which a man takes pride in having recognized.

The value of a correct diagnosis in these various diseases consists in its effect on the line of treatment to be followed.

Chlorosis and secondary anemias require iron and usually receive it. In primary anemia however, and in the leukemias, iron is rather contraindicated, being of no value. Arsenic is of immense value in fact, the only drug to be at all relied upon. It is these very cases which are so often unrecognized because of no blood examination and which receive a long course of iron when arsenic should be given instead.

Only by a blood count can leucocytosis or an increase in the polynuclear cells be recognized. In many conditions this may be of great importance. For instance, in cases with

obscure physical signs when the disease is deeply seated during the first few days one may be in doubt whether he is dealing with a case of typhoid or pneumonia. I have seen the correct diagnosis made more than once by a count of the white cells, pneumonia showing a leucocytosis and typhoid not. In general all inflammatory and febrile conditions show a leucocytosis, typhoid being an exception. Often an inflammatory focus may be present with no rise of pulse rate or temperature and yet leucocytosis is present. The most important of these inflammatory conditions as regards this point is appendicitis. We all know the difficulty in forming the correct opinion as to the advisability of operation. There are some mild cases seen early and showing no fever, yet in which we are sure enough of the diagnosis and every one of us knows the danger and the occasional death in this very same class of cases in which operation has been delayed or not performed at all. I remember one such case. There was a leucocytosis of seventeen thousand with no rise of temperature or pulse rate and with the physical signs by no means alarming. Operation was advised on the basis of the leucocytosis and a perforated appendix was found. This, of course, is an unusual case, yet it is these unusual cases that one wants to be able to recognize and not those cases which are diagnosed by the mother clearly and correctly long before the physician arrives.

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### VIBRATION MASSAGE, ITS APPLICATION TO DISEASE.

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*By C. K. Johnson, M. D., of Bristol, Vt.*

Massage or mechano-therapy originated many years ago, but vibration is an achievement of the last twenty-five years. Complete text books upon this subject are of very recent date.

What is vibration? Vibration is the form in which all force in nature becomes manifest. Sound is vibration. Electricity is vibration, nerve energy and organic function are forms of vibration. There is no life without force. No force without vibration. Bearing this in mind we look upon it as being a mode of energy in direct imitation of nature's own way

of producing and maintaining activity of any kind. Vibration in its therapeutic significance means the act of imparting a more or less intense trembling motion to an object. The modern means used for this purpose is the vibrator, usually operated by an electric motor.

Vibration is in reality but a succession of strokes which follow each other more or less rapidly. These strokes may be short or long, faint or severe, and determine the depth of the vibrating impulse on the tissues to which it is applied. In response to this vibration, every molecule within the sphere of the vibratory impulse trembles, the intensity of response depending on the relative distance from the point of application. There is no change in the relative position of the molecules to each other. This is vibration: The elementary form of stimulus is contact. The firmer the pressure, the greater the stimulation. Thus vibration may be primarily a stimulus, all stimuli being received and transmitted by some part of the nervous system. We recognize vibration as an agent capable of affecting the nervous system in its different functions. Over-stimulation fatigues the nerves and produces a sedative effect. These effects would to a greater or lesser extent involve the organic tissues and functions controlled by the nerves acted upon. Motion produces heat and promotes oxidation and metabolism. An artificial hyperemia being produced, excretion and absorption are more active while pain is received. Forcible vibration diminishes blood pressure. Weak vibration increases it. Vibration over the thorax affects the circulation favorably. In vibratory massage, the kind, number and rapidity of the consecutive vibrations are important. Slow vibration produces principally a mechanical effect. Rapid vibration of several thousand per minute produces an effect similar to a strong faradic current. Medium rapidity produces a blending of the two.

Prof. Murrey of Paris found in dogs, on which he established a gastric fistula, that vibration over the stomach for five minutes had a very limited influence on its secretory activity, while fifteen minutes' application greatly increased the secretion of pepsin and hydrochloric acid. After vibration over one kidney for ten minutes this organ excreted a large amount of urine of lighter color and of less specific gravity than that obtained from the opposite kidney.



The vibrator may be used as a method of suggestion in suitable cases, the ailment being without anatomic foundation. In massage of the internal organs, especially those of the abdomen, vibration is preferable to massage by hand, especially when the abdominal walls are fleshy or rigid. Vibration is contraindicated in all morbid processes, the products of which if introduced into the circulation, would be harmful, e. g. All forms of suppuration, phlebitis, diseases of the osseous system, acute inflammations and the like. It should not be used during the menstrual period. With reference to its application to diseased conditions, I will first briefly consider two cases.

CASE 1. Male, 53 years of age, consulted me on October 17, 1905, with the following history: Pain in the lumbar region, almost constant, frequent micturition with difficulty in starting stream, pain through perineum radiating to head of penis, worse at night. Constipation, general weakness, patient being exhausted on slight exertion. Physical examination,—rectal, prostate enlarged and tender on pressure, urethral—hyperesthesia of whole urethra, especially at prostatic portion and neck of bladder, catheterizing after patient had urinated showed six ounces residual urine. Cloudy, acid, some pus and mucus. Treatment: Hyoscyamus was given for a few days to relieve acute condition, then every second day the bladder was irrigated with boric acid solution, followed by application of euorol to urethra and bladder neck, with vibration to prostate per rectum, using a solid but flexible rubber vibratode about six inches in length. Vibration was also used over whole abdomen, lower dorsal and lumbar vertebrae. Patient began to improve after first few treatments, these being given at gradually lengthening intervals, bowels became regular, urination less frequent with but little pain, residual urine less, prostatic enlargement diminishing and his general condition steadily improved, until he was discharged cured, the prostate being of about normal size.

CASE 2. Female, 53, had been in bed several weeks following an operation and complained of severe pain over whole length of spine, radiating to sides, especially in lumbar region, she also had pain in both knees. Treatment: Vibration over spine and all painful areas with relief at once, some pain returning

however after a few hours. Several treatments gave permanent relief.

I have treated several cases with enlarged prostates with its accompanying symptoms with marked benefit.

Constipation is much relieved by this method. My experience in this line of treatment is somewhat limited, but I am well satisfied with results.

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Scarless surgery is one of the latest achievements in medical science. The London surgeon who conceived the idea and successfully put it in practice is unable to meet the demands for his services. The idea is a simple one. In making the incision the scalpel does not cut the skin at right angles with the surface, but passes through it at a slant. After the operation is over the skin is joined with the greatest nicety, a magnifying glass being used to see that the contact is perfect. Then a rigid dressing of wool and glass is applied to prevent contraction and as much pressure is applied as is safe. Naturally much depends upon the skill of the operator. The surgeon who perfected the process devotes himself entirely to making incisions in the skin and treating them afterwards, leaving the operations proper to others.

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A dispatch from Washington states that a new kitchen and dining room are being provided for "the poison squad" of the bureau of chemistry, which will begin operations in about two weeks to experiment with the effect of saltpetre in various foods. Dr. Wiley has not yet issued his call for volunteers for the year's work, but a number of the old squad who have been at the business of experimenting with chemical food will re-enlist, and the chemistry officials find no difficulty in getting recruits. Most of the men in the squad are young clerks from the bureau of chemistry.

The experiment this year is regarded as especially interesting, because of the general use of saltpetre in preserving and coloring meats. The results will be surprising to a great many people if it is found that ordinary corned beef put up with saltpetre is not healthful. Nearly all the other preservatives of meats and canned foods have been ruled out by the secretary of agriculture in the meat inspection regulations as a result of the tests made by Dr. Wiley's poison squad.

## Vermont Medical Monthly.

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### EDITORIAL.

The lessons one may learn from attendance at the sessions of the State Society are numerous and varied, and one of the most important is the value of meeting professional brethren in medical discussion and social intercourse with one's neighbors.

The meeting at Barre, Thursday and Friday of last week was conspicuous in the interest taken by the members not only in the scientific, but in the social side of the gathering, and in nearly every respect the meeting was in advance of former years. The medical profession and their friends in Barre, and the committee of arrangements in particular cannot receive too much credit for the excellent manner in which all the wants of the members and their ladies were attended to.

The inevitable questions came up for consideration, but although there was much discussion in the House of Delegates regarding

the contract practice, the matter was at last left in a rather unfinished state, which amounts to very little, the society simply carrying a motion that it disapproves of contract practice by its members. The utility of this motion remains to be seen. Undoubtedly the conscientious members will give up the practice upon which the State Society frowns, but there is no direct hindrance to the making of contracts by those who regard the present dollar more highly than their own future, or the good of their neighbors.

As to the insurance question, it was nipped in the bud before any action was taken, consequently the State Society has nothing to say on the matter. Without doubt there are two sides to this subject and it is perhaps as well that another year be given to adjustment of conditions before anything definite is put on record. Another matter of considerable importance acted upon by the House and Society was the raising of the annual dues from one to two dollars. As a whole, the meeting will go down in the records, not as an especially important one from the standpoint of actions taken, but as a most profitable gathering, professionally, and a conspicuous social success.

The recent action of the State Board of Health in ordering several municipalities in the State to provide themselves with new water supplies, is in the discharge of the obligation imposed upon the board by the Legislature of 1904. The reception of this order by certain of these cities, displays a prominent American characteristic—indifference to properly constituted authority. Anything that savors of coercion is instinctively resented by the average American even if the requirement is vitally advantageous to himself. This characteristic in the young American is called obstinacy and is usually best treated by a re-



sort to first principles in the prosaic but wholesome use of the shingle or slipper. One can not resist the feeling that a properly magnified application of the same treatment would be fitting in the case of these refractory towns. Of the virtue of the case in question, there can be but one opinion on the part of any one conversant with the situation and informed regarding the history, methods and results of modern sanitary purification of municipal water supplies. Within the last four years there has been an increase of 70 per cent. in the users of filtered water supplies and during this same period, the municipal death rate from typhoid fever has dropped markedly. That this drop is largely due to the improved municipal water supplies is indicated by the fact that no such reduction is evident in the rural death rate from this disease. Specific examples of cities using filtered water are in almost every case unimpeachable arguments of the efficiency of this method of purification. The statistics of these towns show a most remarkable reduction in death rate not only from the so-called water borne diseases but also in the general death rate, indicating that the effects of impure water are more wide-spread than has usually been thought. The only exception to the general rule is the city of Washington, in which the installation of a new filter has not reduced the death rate as yet. The recentness of a filtration plant in this city, however, is such that this instance can not be taken as a fair test and it is the general belief of those most conversant with the situation that the fault here will be soon discovered and remedied.

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The following from a Western contemporary is interesting as showing how Vermont pioneer work in the examination of the eyes and ears of school children is looked upon. While we believe that in general the habit of

patting oneself upon the back is apt to be detrimental to progress, yet we do think that Vermont may well be proud of her aggressive work in sanitary legislation. This is not the first time she has taken the lead in such work. The idea of establishing a school of instruction for health officers, originating in the State, is being copied all over the country and is resulting in an inestimable impulse to sanitary regulation and a consequent reduction in human misery:

It is a source of constant wonderment to the writers for the public press, that the state governments pay so much attention to the prevention of hog cholera, glanders among horses, foot and mouth disease in the herds of cattle and scab among the sheep, but seem to care little or nothing for many of the minor diseases that spread among the school children. It is asserted that there are sixteen millions of school children in this country who are suffering from some eye, ear, nose or throat disease, which can be easily detected and generally cured, if the public health and educational authorities will only decree that the work shall be done. It is not hard or expensive to do. The reason it is not done may be ascribed to apathy or neglect. It is claimed that there are 300,000 blind people in the United States, many of whom would not have become blind if their disabilities had been detected during school life, and that it costs the public in the neighborhood of fifteen millions a year to care for these unfortunates. Reducing the question to the mere sordid standard of money, it would seem not to be a matter of economy to neglect the eyes of the school children.

We frequently see in the newspapers evidence of sympathy with the school children in their physical sufferings. Some school director will bring up the subject of examination by competent physicians of the children whose parents do not appreciate the necessity of medical attention in ailments that threaten to become chronic in the individual, if not cared for in their early stages. But the taxpayers have never yet been made to realize that such an expense would be a legitimate one for them to bear. A great advance has been made in school hygiene in late years. It is recognized that public school buildings must provide so many cubic feet of air for each child;

the ventilation must come up to certain well known standards; the plumbing and heating must be right; washstands and towels must be free from contagion; desks must be of proper slant and height; studies must be changed so that the eyes, mind and body, will be properly rested; the children must be vaccinated; quarantine regulations must be observed so as to prevent the spread of contagious diseases; games and sports must be supervised. All these things are attended to with greater or less wisdom, but the school authorities should go a step further, and provide for systematic examination of the eyes, ears and throats of the children, and provide for a correction of unnatural conditions in these organs. The result of such steps will be wonderfully marked in the next generation.

In two states—Connecticut and Vermont—the legislatures have provided for the examination, by medical men, of the eyes and ears of school children, so that disease in its incipency may be discovered and corrected. In his last message, the governor of Massachusetts strongly recommended to the legislature that such examination be provided for. The medical societies of various states have taken the matter up, and made recommendations which will be in due course presented and urged to their legislatures. The western states cannot afford to be behind the times in this matter. Every state medical society in the country should put forth its best efforts to secure results in this much needed direction.

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## NEWS AND PERSONAL ITEMS.

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*We desire to make this column of personal interest to all. Physicians are requested to send news items.*

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### VERMONT.

Dr. J. G. Thibault of Winooski and Miss Beatrice Carpentier were married September 12.

Dr. Clayton G. Andrews, formerly of Waterbury, has gone to Canton, N. Y., to take the practice of the late Dr. J. N. Bassett.

Dr. Lyman Allen has returned to his home in Burlington, and is convalescing satisfactorily from the effects of the operation which he underwent in Boston.

Dr. W. R. Noyes of West Burke has gone to New York city for a post-graduate course. Dr. H. A. Suitor, a graduate of the last class from the medical department of Tufts, has taken his practice.

The annual dinner to the medical and surgical staff of the Fanny Allen hospital was held on September 27 and was, as usual, an enjoyable occasion. Eighteen of the staff were present and sat for a group picture. The dining table was handsomely decorated. After the dinner had been served, Dr. D. A. Shea, the house physician, spoke in behalf of the directors and sisters in charge, expressing their thanks to the members of the staff for their faithful work, and others made brief remarks.

The city of Burlington, having refused to concede to the requirements of the State Board of Health regarding the water supply, the board has posted the faucets in all public places, and has served the following notice on the owners of such buildings:

"You are hereby notified that the State Board of Health finds and is of the opinion that the water taken from Lake Champlain, at the point where the city of Burlington now takes water therefrom, and as supplied to the inhabitants, public institutions and the business houses and manufacturing establishments of Burlington, by the water system of the city of Burlington, is so contaminated, unwholesome and impure that the use thereof for drinking purposes and domestic purposes, endangers the public health.

"And further, during such time, and until such danger has ceased, all said persons so in charge, authority or control over any of the buildings or places above mentioned and described, are prohibited from permitting water from such sources to be drawn from any faucet in any of the buildings or places above included or described; but this shall not prohibit the use of such water for laundry or cleaning purposes or for flushing water closets or for watering lawns, gardens and plants or for stable purposes and mechanical and chemical purposes."

"Therefore, under the authority of Section 1, of Act No. 115 of the Acts of the Legislature of Vermont, of 1902, as amended by Section 1 of Act No. 139 of the Acts of 1904, all



persons in authority, control or charge of any University Building, Dormitory, School Building, Parochial School Building, Room, House or place occupied or used for school purposes or in connection with any College or School or of any Church, Hall, Library, Public Building, or Public Drinking Place, Theatre, Fire Department Building, Hospital, Drug Store, Hotel, Restaurant, Boarding House, Mill, Factory or Shop, are hereby prohibited from using or from permitting to be used in or about such building, room or place any water taken from the above described sources for domestic purposes or for drinking purposes in any way, until, in the opinion of the State Board of Health, such danger has ceased.

This action has already spurred the authorities to action, and some move will probably be made in the near future toward the bettering of the city's supply.

Several cases of typhoid are reported at Cuttingsville, and Dr. C. S. Caverly of the State Board of Health has been investigating the cause.

Dr. Harry W. Mitchell, of the Danvers (Mass.) Insane Hospital was called as expert on insanity at the Mullen murder trial at Montpelier. Dr. Mitchell is a graduate of the University of Vermont College of Medicine, Class of 1896.

Dr. William A. Cassidy of St. Albans, a graduate of the University of Vermont College of Medicine in 1905, died in Russell, Mass., Oct. 10, from pulmonary tuberculosis. The funeral was held from the First Congregational Church at St. Albans, Oct. 14. Dr. Cassidy was the eldest son of George Cassidy, general freight agent of the Rutland Railroad. He served in the Spanish-American War, as a member of Co. B, 1st Vermont Infantry, and while at Chickamauga Park his health became badly injured. He had been practicing medicine in Russell for the past year.

The result of the investigation into the condition of the canned goods sold in Vermont, by the State Laboratory of Hygiene, has been made public. In all, 25 samples were analyzed, and the result is in favor of the manufacturers of the goods. Out of the 25 samples, only six were found to be preserved with a compound of boron. In some instances there were disclosures of fat, muscle fibres

and connective tissue. In eight of the samples the report of good quality was made. The goods found preserved with compound of boron were Rex-Vienna sausage, Armour's deviled ham, Veribest-Vienna sausage, sliced star ham, Armour's ham loaf, Shield-chipped dried beef.

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#### MASSACHUSETTS.

Dr. Frank B. Easton of Boston and Miss Lillian Louise Libby were married at Laconia, N. H., Oct. 3. They will reside in Boston.

Dr. Peter Owen Shea of Worcester was married at Burlington, Vt., Sept. 18, to Miss Mary Loretta Arbuckle. Dr. Shea is a graduate of Holy Cross in the class of 1892. He received his degree in medicine from Columbia in 1895, and the master's degree from his alma mater in 1896. He was assistant surgeon of the 9th Massachusetts U. S. V., during the Spanish-American War and is now visiting surgeon at the South Framingham Hospital.

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#### NEW YORK.

Dr. Blake Bigelow of Malone, died Sept. 13, in a Boston hospital, aged 45 years. He had been practising medicine for some time at St. Regis Falls, N. Y. He leaves a wife and two children. Dr. Bigelow was a graduate of the University of Vermont College of Medicine, class of 1883, and son of the late Rev. A. F. Bigelow, who was well known throughout northern New York.

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#### NEW HAMPSHIRE.

Dr. Daniel R. Chase, a recent graduate of Dartmouth Medical School has taken the practice of his father, Dr. E. C. Chase, at Orford. The older physician expects to locate in some city.

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For the control of nasal hemorrhage tampons can be readily prepared as follows: A layer of cotton is wound around a penholder or similar object until the desired thickness is obtained and then withdrawn. The cotton cylinder is then moistened, squeezed dry and inserted into the nasal cavity. If the projecting end of the tampon is now moistened it will swell up and thus produce sufficient compression. — *International Journal of Surgery.*

## AN EPITOME OF CURRENT MEDICAL LITERATURE.

### MEDICINE.

#### OPSONINS AND OPSONIC INDEX.

JOSEPH HUME (*Medical Brief*, Oct., 1906) explains the meaning of the terms "Opsonins" and "Opsonic Index" as follows: Much has been written of late about the "Opsonic Index," but it is a subject concerning which even those engaged in active clinical work know but little. Whether the pathologists and bacteriologists, and those who spend their lives in laboratory work, know much more is, perhaps, open to question. What is it we mean by the term: "Opsonic Index?" and what are opsonins? We all know that many diseases are conveyed through the medium of the blood which, roughly speaking, consists of plasmon with red and white corpuscles. The red corpuscles are oxygen-carriers, and take an active part in all metabolic changes. The function of the white corpuscles, or leucocytes, was formerly a mystery; but within the last forty years they have been peculiarly honored as the defenders of the blood against disease germs. It came to be generally believed that they attacked and devoured intrusive, hurtful germs that found their way into the circulation. For this belief there was good reason, for in microscopic examinations the white corpuscles were found with the bacilli inside them. They engulfed the bacteria, as the ameba does its food, and having absorbed them, they carried the microbes to the liver and the spleen, there to be gotten ride of. This theory with regard to the functions of the white corpuscles seemed to be very complete, but it is now maintained that it has been upset, and is erroneous. It is said to have been demonstrated that there is something in the serum of the blood, called opsonins, that does battle with the bacilli, and that the white corpuscles are merely scavengers which carry off the bacilli after they have been worsted by the opsonins. Hence the conclusion that in fighting disease—consumption, for instance—we must not aim to increase the number of the leucocytes, but, to strengthen the opsonins.

The "Opsonic Index" shows by figures the resisting power of an individual as against bacilli. Suppose, for example, that in a healthy subject each white corpuscle is found to englobe eight bacilli; in another patient, who is consumptive, the number entrapped falls to four, and in a third to two; their opsonic indices would be, respectively—eight being the normal—1, .5, and 0.25. It is urged and maintained that in proportion to the power of resisting disease is the chance of recovery. The colorless corpuscles ought to eat up or appropriate the bacilli, but they are not always hungry, and they are sometimes satiated. Wright's plan is to tempt their appetite, but giving them a vaccine which they injected into the patient's blood causes the pouring out into it of a substance which enters into chemical combination with the bacilli, rendering them not only digestible but appetizing. The material produced as the result of this mode of stimulation is called "opsonin," from the Latin word *opsono* (I cook for the table).

The vaccine is prepared by grinding tubercle bacilli to a fine powder and suspending it in dilute glycerine. The mixture is then sterilized by heat. The object is "to bring about the destruction of the tubercle bacilli in the local nidus of infection by

leading through that nidus in a continuous stream a lymph rich in protective substances." The idea of passing a stream of blood which is rich in protective substances through the infected area is distinctly good.

#### CAUSES OF COUGH.

BULETTE (*Col. Med. Journ.*, August, 1906) in an article on coughs due to cause outside of the lungs writes as follows:

Cough, to the clinician, is the most important of all the modified respiratory movements, because it may not only express an abnormal condition of some portion of the lungs, trachea or larynx, but may also be indicative of irritation in even remote and un-associated parts. For example: Cough may and does often result from irritation in the nose, ear, pharynx, stomach, liver, spleen, intestines, ovaries, and wax.

It is a well known fact that patients with aneurism of the aorta, suffer much with cough, due to pressure on the recurrent laryngeal nerves.

Also diabetics sometimes suffer from distressing cough, even when no lung trouble is present, caused possibly by diseased condition of the blood acting on the respiratory centres, or by dealkalization of the blood, either by excessive formation of oxybutyric acid within the body, or arrested elimination (Stadelman). In some cases of Bright's disease cough is present, particularly in chronic parenchymatous nephritis, due, no doubt, to changes in the blood, which becomes hydræmic and deficient in albumen and red corpuscles, causing disorder in the medulla.

Foreign bodies in the larynx or pharynx will often cause violent cough, and the same is true of various tumors. I have also seen distressing cough in paralysis of the vocal cords, where there is no exciting cause in the lungs; and this is particularly true in cases of laryngeal paralysis resulting from typhoid fever.

In ulcer of the stomach, cough is said to be quite common; also in chronic liver troubles, and in chronic diseases of the spleen. Ovarian and uterine coughs are, no doubt, familiar to every gynecologist.

Syphilitic gummata and other tumors, when occurring along the course of any of the afferent or efferent respiratory nerves, or in the medulla, could and possibly do often excite cough.

When it is remembered that the great pneumogastrics, the glossopharyngeal, trigeminal and cutaneous nerves are the afferent nerves of respiration, and that the phrenics, pneumogastrics and certain spinal nerves are the efferent nerves of respiration and the distribution of these nerves are remembered it is easy to understand how cough can be excited, and is often caused by irritation at some remote point.

#### A NATIONAL HEALTH DEPARTMENT.

In this paper, read before the American Association for the Advancement of Science, at its June meeting, DR. J. PEASE NORTON, assistant professor of political economy at Yale University (*Journal A. M. A.*, Sept. 29), points out how little is appropriated from government expenditures for the preservation of the public health and advocates the establishment of a national department of health, with its head a cabinet officer, and gives rather elaborate details of the plan on which it might be organized. The economic reasons advanced for such establishment are: (1) To advance the progress of society by the in-



creased percentage of exceptional men in addition to the general increase of population; (2) to lessen the burden of unproductive years by increasing the average age at death. He figures that an increase of five years would save from \$800,000,000 to \$1,600,000,000 *per annum*. 3. It would also decrease the burden death on the productive years, and (4) it would lessen the economic burden of sickness. Could the days of illness be cut down one-third, a saving of nearly \$500,000,000 could be made. It is estimated that \$600,000,000 are now spent on criminality in the United States. If this is largely due, as is claimed, to social environment such as overcrowding, alcoholism, etc., a fractional diminution would be of the greatest value.

#### THE ART OF MEDICINE.

E. HORNIBROOK, Cherokee, Iowa (*Journal A. M. A.*, Sept. 15), thinks that it is possible that while scientific medicine has made wonderful advances in the last half century, the art of medicine, as distinguished from the science, has even deteriorated. Scientific research has done much for preventive medicine, but the triumphs of modern investigation in medicine are limited. Observation and experience have done practically more, he thinks, than laboratory research, and he questions the wisdom of so framing the curriculum of medical instruction that so large a part of the time is given to such subjects as bacteriology at the expense of the study of practical symptomatology and perverted function. He does not wish to be understood as decrying research. His contention is not that sciences should be studied less, but that symptomatology and therapeutics should be studied more. The tendency of the age is to extol the new and to decry the old, and often with unsatisfactory results. Wisdom that has not been gathered within the last decade is seldom accredited, and he sees in this cult of the novel, the reason for the nostrum evil. With the decline of the art of medicine has come that of the family physician and the confidence and esteem in which he has been hitherto held, and the gratitude and affection he once received is not given with the ungrudging generosity with which it is given to the trained nurse. Perhaps, Hornibrook says, our patients think that we are more interested in the scientific aspects of their cases than we are in their immediate welfare. In either case it is a matter for our serious consideration.

#### DIETETICS OF OBESITY.

First among the methods of reducing obesity, according to A. C. CROFTAN, Chicago (*Journal A. M. A.*, Sept. 15), is diet, and second to this is the regulation of muscular exercise. These means can be reinforced by hydrotherapeutic and medicinal means. The latter, however, comes chiefly into play in the symptomatic treatment of the complications of obesity. He quotes a German writer in classifying obesity into three degrees, the enviable, the comical and the pitiable. The first practically requires no correction, the only effort to be made being to prevent its passing into the other stages. The other two require more or less active measures to cause a loss of fat. It is convenient, he says, to arrange three degrees of reduction cures. In the first, the caloric requirements are reduced to four-fifths of the normal, in the second to three-fifths, and in the third to two-fifths. Thus, in an individual normally requiring 2,500 calories, the food should have a caloric value of 2,000, in the second degree of 1,500, and in the third degree of 1,000 calories. The four-fifths diet is useful mainly in preventing the increase of fat in persons in-

clined to obesity. It is suitable for continued use, is easily borne, and requires no special calculations. It is usually sufficient to allow meat only once a day, to reduce the amount of starchy and sweet foods somewhat, to restrict or to forbid alcoholics, and to limit the liquid intake generally to from one to one and one-fourth liters daily, using also filling food of small caloric value. The second degree is also suitable for continuous use and should be adopted for strong fat individuals who can not at once stand the third degree of reduction cure. This last, when taken, should be under the supervision of a physician and in an institution. Unlike the other two the weight reduction is rapid and it is specially dangerous in very young or old people. The popular Banting cures, etc., are of this type and therefore dangerous and to be condemned. The question as to the amount of each food constituent in reduction cures, proteid, fat, or carbohydrate, is discussed, and the general rule laid down that the individual should receive an amount of albuminous food incorporating from 60 to 80 grams of albumin to keep up the nitrogen equilibrium and to protect the tissue albumins. The remaining number of calories required may be supplied by carbohydrates and fats, the former, especially, if they are voluminous, being given the preference. The restriction of liquids to one or one and one-half liters a day is of value, but its effects are not of themselves permanent. The special articles of diet are mentioned. Alcohol should be included in the calculation if used. It should be allowed to patients who have been accustomed to it so as not to rob the heart at once of its accustomed stimulus. Lean meats, plainly prepared, that is, roasted, broiled or stewed, without rich sauces or gravies, are preferable. Milk is useful provided its caloric value and water are estimated. Thin soups are useful, for their caloric value is practically nil. Articles made of flour or rice, except bread in small quantity, carefully weighed and its caloric value calculated, and small amounts of potatoes, may be allowed in the first and second degrees of reduction cure. Vegetable foods growing underground or in pods are useful. They should be served only boiled in salt water, without the addition of butter, flour or cream. The indiscriminate use of mineral waters is condemned by Croftan, though they may have a certain psychologic value. These patients often do well at mineral springs and cures, but the good effect is mainly due to the regulated diet which the patients undergo more willingly at a watering place than at home.

#### SYPHILITIC OPTIC ATROPHY.

C. S. BULL, New York (*Journal A. M. A.*, Sept. 15), has tried the use of posterior conjunctival injections of sublimate of mercury thoroughly in twenty-five cases of progressive syphilitic atrophy of the optic nerve and gives details of his method. He finds it, however, of no more value than the usual routine treatment by mercury, potassium iodid and strychnia and sees no encouragement for its continued use.

#### NEOPLASMS OF THE COLON.

The general subject of neoplasms of the colon is discussed by A. F. JONAS, Omaha (*Journal A. M. A.*, Sept. 15), who reports sixteen cases. While the innocent growths may sometimes give rise to mechanical obstruction, etc., the chief interest is in the malignant tumors, under which head are included carcinoma in all its varieties and also adenoma and inflammatory papilloma. Sarcoma also occurs, but is extremely rare. Cancer is usually primary, but it may be secondary in exceptional cases. It commonly

occurs between the ages of 40 and 60, but it may occur earlier, and it is not safe to exclude it in the diagnosis on account of age. There is no disease of the intestine that in its early stages is usually so free from symptoms, and its existence, therefore, is often unsuspected until after grave complications have developed. Jonas insists on the importance of repeated palpation and of observation of the peristaltic wave in the diagnosis. Cases occur, however, in which no tumor is palpable, and they may progress till a fatal termination is imminent without other evidence of the condition than cachexia, emaciation and aggravated bowel inactivity. Of the 16 cases reported, all but one were malignant and mostly well advanced. There was a mortality of three cases, but recurrences were numerous, and Jonas is unable to say that any of the patients will remain well. While the operative mortality is not so small as desirable, he thinks that with the increase of diagnostic aids permitting earlier recognition of the disease, it will eventually be no larger in these cases than in other abdominal operations. A resection is usually necessitated, and he suggests from his experience two methods as being easy and rapid, viz.: First, in cases in which the resected ends are not entirely free from inflammatory conditions, a closure of both ends of the bowel with purse string and Lembert suture, after removal of the growth, and a lateral anastomosis near the ends with suture aided by the Moynihan clamps; and second, after the removal of the growth, the bowel being otherwise sound, an end-to-end union with a Connell and Cushing suture aided by the double loop suspension ligature. The merits of these methods will be discussed, he states, in a later communication.

#### SIGMOID PATHOLOGY.

The anatomic conditions favoring the occurrence of lesions of the sigmoid region are noted by H. D. NILES, Salt Lake City (*Journal A. M. A.*, Sept. 15). He thinks that angulations and partial obstructions of the colon at this point are more common than has been generally believed, and shows how pressure from hardened feces under such conditions may easily be the cause of ulcer and later of malignant disease. Incomplete non-malignant stricture occurs probably next in frequency to ulcer in this region. The early recognition of sigmoid ulcer and its complications is, therefore, of the utmost importance, and especially since the after results may be so serious. A suggestive history, left-sided tenderness, with or without bowel inflation, colicky pains, pus or blood in the stools, obstinate constipation or obstructive symptoms, other diseases being excluded, are signs that should suggest a sigmoid pathology. Inspection, palpation and percussion, before, during and after distension of the bowel with water or air, are specially mentioned as valuable for detecting and locating stenosis in this part. The essential treatment, as in gastric ulcer, is rest, and timely operative measures, irrigation and starvation methods failing, are indicated.

### GASTRIC AND DUODENAL ULCER.

#### SURGERY OF PERFORATION.

W. J. MAYO, Rochester, Minn. (*Journal A. M. A.*, Sept. 22), says that surgery of acute gastric or duodenal perforation is now on a sound footing, the results depending on the early and prompt diagnosis and operation. He and his brother have had seven gastric and nine duodenal cases with two and three deaths, respectively. Suture of the perforation and

pelvic drainage with or without irrigation, and keeping patient in the exaggerated Fowler's position for several days give the best results. Stricture may be expected and if the patient is in good condition Mayo would usually perform gastrojejunostomy; if not, he would not risk it. In acute recurring hemorrhage he would suture the bleeding point directly; he has not found gastrojejunostomy reliable in these cases. Chronic hemorrhages, on the other hand, can be treated by gastrojejunostomy, though in several cases he has excised the ulcer and closed the defect by a plastic operation not interfering with drainage by later contraction. Six hundred cases of chronic gastric and duodenal ulcer operated on by the Mayo brothers are analyzed, 436 gastric, 135 duodenal, and the rest combined gastric and duodenal. The great majority were indurated. The various surgical procedures are discussed and their methods described. They prefer the no-loop method in gastrojejunostomy, and speak highly of Finney's gastroduodenostomy as admirably fitted for certain cases in which the other method is less suitable. Rodman's operation is also highly spoken of; it has its chief indication in indurated lesions in the vicinity of the pylorus. At present it seems that gastrojejunostomy has the largest field of usefulness, especially when there is permanent interference with gastric mobility by reason of obstructive lesions at the pyloric end. When obstruction is due to spasm or other non-mechanical cause, Finney's method is the operation of choice, and in connection with it, excision of an ulcer, either gastric or duodenal, in close proximity to the pylorus can often be done with advantage. Gastric ulcers not interfering with drainage or motility, should, if possible, be directly excised in the opinion of the Mayos. Calloused ulcers of large and thick hard margins, whether hour-glass or not, are best treated by some form of gastric resection, as they have been found undergoing carcinomatous degeneration. The great majority of all cases call for gastrojejunostomy, those needing excision or resection are exceptions. More than 90 per cent. of patients operated on can be shown to have been cured. Failures are due more to technical errors resulting in bad mechanics than to operation. Mayo advises careful study of nervous gastric symptoms which so closely simulate ulcer and failure of diagnosis of which might bring discredit on surgery. The article is illustrated.

#### ULCER OF THE STOMACH.

W. F. HEWES, Boston, (*Journal A. M. A.*, Sept. 15), holds that medical treatment is an efficient though not absolutely certain method of cure in case of simple uncomplicated gastric ulcer, with or without hemorrhage. In cases of chronic ulcer, complicated with disturbance of the ability of the stomach to empty its contents into the duodenum, that is, cases of obstruction of the pylorus, or contraction of a part of the stomach wall by ulcer causing a permanent gastrectasis, medical treatment gives very satisfactory results for the combined condition so long as it is continued, but permanent cure is rarely accomplished. Surgery, on the other hand, gives good permanent results with a certain amount of risk and on the whole Hewes thinks the advice of surgical treatment is correct. In cases complicated by perforation, recent or past, with continuing symptoms, surgery is the only recourse. He gives a report of his experience calling attention to the advantages of medical treatment in cases of simple uncomplicated ulcer, especially in the well-to-do, who can carry out the treatment for a long period.



There were 51 of these patients, two of whom were subsequently operated on. Of the other 49 cases there were only 16 who carried out the treatment thoroughly, and of these 13 recovered, though 43 were relieved while it was continued. One patient died under treatment from hemorrhage. Of 13 patients treated surgically 6, or 46 per cent., were cured; 3 were not relieved, and 4 died. These figures show that, while surgical treatment is efficient in many cases, it does not prevent recurrence in all cases, and is not infrequently fatal. There were 26 cases of chronic ulcer with gastrectasis. Twenty patients were treated medically; none were cured, but 17 were relieved by treatment while it lasted. Three were not relieved. Some of those relieved were able to go without treatment for several months. Of 14 patients treated surgically, 9 were cured, 3 were not improved, and 2 died. While the facts favor medical treatment as against surgery in simple gastric ulcer there are certain cases in which the possibility of cancer must be considered and an early immediate operation is advisable. Such a case is reported with continued perfect health for two years since the operation.

#### ETIOLOGY AND DIAGNOSIS.

F. BILLINGS, Chicago (*Journal A. M. A.*, Sept. 15), discusses the etiology and diagnosis of ulcer of the stomach and duodenum, which are pathologically identical with the not uncommon acute erosions that temporarily occur, but are not here considered by him. The chronic gastric ulcer follows nutritional disturbance of a limited area of the mucosa, resulting in destruction of this area by the gastric juice. The disturbance may be brought about by bacterial infection associated with local trauma and vascular disease, local areas of muscular spasm, gastric stagnation and anemia may all be factors in certain cases. The classic symptoms are: 1. Pain, usually localized and aggravated by palpation and food. 2. Hematemesis or melena. 3. Hyperchlorhydria and sometime evidences of gastric stagnation. Chronic ulcer, however, is often latent and in such cases one or more of these symptoms may be absent. Intervals of latency may follow periods with these symptoms. Duodenal ulcer is not infrequently associated with gastric ulcer and probably has the same etiology. Its position between the pylorus and papilla of the bile duct is such that it practically produces all the symptoms of the gastric disease, except that usually there is only melena and no hematemesis. Billings says: "Given a history of dyspepsia with pain, tenderness, hematemesis or melena, or of occult blood in the stomach contents and stool, hyperchlorhydria with evidences of gastric stagnation, if after a full meal the stomach does not become practically empty in seven hours and if the stagnant element is hyperacid, and if it contain undigested starch cells, ulcer of the stomach or of the duodenum near the pylorus is present." Cholecystitis may stimulate gastric ulcer, but the localization of the pain and its radiation and the absence of blood in stomach contents and the stools will usually aid the diagnosis. When jaundice and evidence of general infection are present, the diagnosis is more plain. The pain of simple hypertrophic pyloric stenosis is not so severe as that of ulcer nor is there the frequent hyperchlorhydria. It occurs usually in the very young and the history will also aid in the diagnosis. Cancer of the stomach may cause confusion, especially as it is often grafted on an ulcerative base. For a time it may keep the diagnosis in doubt. Neuroses of the stomach are not at all un-

common and may sometimes render a good deal of careful study necessary for a positive diagnosis. The gastric crises of tabes, the referred pain of appendicitis, the Dietl phenomenon of floating kidney and the abdominal or epigastric pain of pneumonia and pleurisy ought not to cause confusion with careful examination. Ulcer of the stomach and duodenum is not uncommon and should be easily recognized when the classical signs are present. In other cases there may be difficulty, requiring long study of the case and of the gastric contents and stools.

#### SURGICAL MEASURES.

The questions as to the surgical procedures needed in gastric and duodenal ulcer are discussed by W. L. RODMAN, Philadelphia (*Journal A. M. A.*, Sept. 15). In case of perforation of subphrenic abscess, there is no question as to the propriety of prompt operation; in hemorrhage there is room for difference of opinion, under certain conditions of the ulcer, etc., and there may be a still greater variance of opinion between surgeons and internists as to the management of non-perforating, non-hemorrhagic ulcers and their consequent adhesions and other complications. Perforation is considered by Rodman under three heads: The acute, subacute and chronic. By subacute perforation is understood cases in which extravasation into the abdominal cavity does not occur, or only to very limited extent. Chronic perforation is the more insidious process in which a plastic exudate limits the extravasation and a subphrenic abscess results. Drainage by the abdominal, lumbar or transpleural route, according to the surgeon's preference and the needs of the case, is the proper treatment. Rodman believes, from the evidence of autopsies, that acute and subacute ulcers are much more common than was formerly believed, and that many cases must be latent and unrecognized. Duodenal ulcers are far more common than we have hitherto thought and in the Mayos' experience are practically as common as gastric ulcer. Rodman does not favor excision of the ulcer when found, preferring to infold the perforation with a few Lembert sutures and using an omental plug when possible. Only when the infolding interferes with the pyloric passage would it seem best to perform gastroenterostomy. If suturing, excision, resection or pylorotomy are all impracticable on account of necrotic tissue or bewildering adhesions, a tube should be placed in the bowel, distal to the perforation and brought out of the stomach as in Witzel's gastrostomy. While the mortality of operation for perforation has been high—something over 50 per cent.—he thinks that with early diagnosis and prompt operation it ought to be reduced to 15 or even 10 per cent. Hemorrhage is estimated by him to occur in 50 per cent. of all cases and will be lethal in about 16 per cent. of these. With acute ulcers it is not recurrent, as a rule, and is usually recovered from. Surgical intervention is not needed and hot water (temperature of from 120 to 130 F.) is the best remedy. In chronic ulcer, hemorrhage is essentially recurrent, and he prefers the direct surgical methods of treatment in these cases when practicable. Gastrectomy is best, but next to this is gastrotomy followed by ligating the mucous membrane *en masse*, making a well-marked cone according to Andrew's method. Transfixion, with careful ligation has often succeeded, but Rodman protests against cauterization, and gastroenterostomy, he thinks, will fail in bleeding from vessels of any size. Except in acute ulcer, which tends to heal spontaneously as a rule, he is very skeptical as to medical treatment. It should not be persisted over four weeks in chronic

ulcer. If, as usual, the ulcer is situated near the pylorus, pylorotomy is advised; if it is on the anterior wall in the cardiac region, is circumscribed, reasonably free from adhesions and can be readily located, Rodman advises excision or partial gastrectomy. With numerous and dense adhesions and immobility, especially in weakened subjects, gastroenterostomy is preferable. Pyloroplasty is now generally discredited, but Finney's operation, generally called gastroduodenostomy, has greater claims for recognition. Jejunostomy has been considerably performed in Germany, but Rodman thinks it will hardly displace gastroenterostomy, though it has some advantages.

and all the more so if stasis is also present. 2. A simple profuse hemorrhage is not a surgical indication. But if it is repeated, an operation is relatively, not absolutely, indicated. An operation is only indicated if the pulse and general condition of the patient justify it." Lambert thinks that in skilled hands the mortality of gastric surgery for ulcer is to-day about the same as in medical treatment without surgery. Physicians can not adopt enthusiastically a surgical point of view until the best operation and its technic is more generally agreed on, and we have more statistics of final results. At present, he believes, at least, in careful preliminary medical treatment.

#### THE MEDICAL TREATMENT OF DUODENAL AND GASTRIC ULCERS.

A. LAMBERT, New York City (*Journal A. M. A.*, Sept. 15), states that when medical treatment is considered desirable in gastric or duodenal ulcer, the first essential is complete rest for the body and stomach, which implies rest in bed and rectal feeding, followed by milk diet. The length of time necessary for the patient to remain in bed varies from a week or two to several weeks, according to the severity of the case, and the rectal feeding should continue from three or four to ten days correspondingly. Gastric feeding should be begun before the rectum becomes intolerant, and as the amount given this way is increased that by the rectum should be decreased. Peptonized milk at long intervals should be the first food, and at the end of the week the patient should be getting a quart in 24 hours, with the rectal feeding discontinued. It should then be gradually increased up to two quarts a day and it is safe to begin to reduce the peptonization and to use cooked cereal gruel as part of the diluent. At the end of the fourth week the patient may be taking raw milk and in the fifth and sixth weeks can gradually return to a light unirritating natural diet. During the bedfast period the patient should receive daily alcohol spongings and baths and light massage, avoiding the abdomen. Some unirritating iron preparation may be given if necessary. To insure against relapses the patient should be instructed to use an unirritating diet and mode of life, avoiding overexertion, alcohol, highly-spiced foods and anything that will irritate the stomach. Large doses of bismuth subnitrate are recommended before meals. The Lenhart protein diet is mentioned and described. Special mention is made of two methods of drug treatment: the Fleiner bismuth cure and Cohnheim's olive oil treatment. The objections to them are the use of the tube, which the author, however, thinks is not always essential and can be used safely with due precautions. In cases with hemorrhage, however, it is decidedly contraindicated. The use of astringents is mentioned—also the use of alkalies. The serious complications of ulcer are perforation and hemorrhage and the former is always a matter of surgical treatment, and the latter if severe; the patient should not look on the surgeon as the last resort. While the results of medical treatment are not altogether favorable, Lambert thinks that if we could separate the acute cases in young individuals, we would have a high percentage of actual cures. As regards hemorrhages, he thinks medical treatment offers more chances than surgery, but accepts Leube's indications for surgical interference. "1. Repeated, little, unceasing hemorrhages, sapping the vitality of the patient, absolutely indicate early surgical interference,

#### PEDIATRICS.

##### SUMMER DIARRHEA OF CHILDREN.

W. L. HARRIS (*Archives of Pediatrics*, July 1906) writes of the advancement of medical science in the treatment of diarrhea in children.

Some of the fundamental principles of therapeutics we have learned from experience in recent years are of great comfort even when not of decided benefit to our little patients. We have stopped giving so many nauseous drugs, and have learned that so few drugs do any good at all in this disease. We have pretty generally come to the conclusion that it is best for the child if we leave off many of the drugs that were formerly used in the hope of antiseptic or astringent action. We now realize that it is not our sole aim to stop or check the diarrhea, but to sustain the patient in every way possible and assist nature to combat the infection. We have found astringents practically useless in the serious types of the disease, and about the only drug that is generally used is bismuth in some form. We have fully learned the importance of trying to keep the child's stomach in good condition and to do all we can to help digestion and promote nutrition till the child is able to overcome the infection. We have learned that persistent feeding and drugging, as formerly practised, can do great harm, and we have also learned that the problem of selecting a suitable and harmless food is often a very perplexing one. Probably the point of greatest value we have learned in feeding during these acute attacks is to stop all milk at once in the acute cases and not resume it till all acute symptoms have disappeared.

The question of feeding and nutrition in the long-continued serious cases is still very unsatisfactory. Probably the best substitute food now generally used is a dextrinized gruel of either rice, barley or wheat. This is, as a rule, harmless; it may ferment, but it does not putrify, and offers a pure culture medium in the intestines, and besides the child can take large enough quantity of it to satisfy him without doing him any harm. The various broths may help us over an emergency for a while, but we cannot give them in large enough quantity to do much good for fear of increasing the diarrhea. Beef juice is satisfactory only to a slight degree and we can give it only in small quantities. Albumen water was formerly much used, but now not so generally; it decomposes and putrifies and is not digested or absorbed in the intestines. Unquestionably our best results in reducing infant mortality from summer diarrhea have been accomplished through prophylactic measures, and our greatest hope in the future lies along this line.



## FAT PERCENTAGE IN MILK.

LOUISE TAYLER JONES (*Archives of Pediatrics*, July, 1906) in discussing the variation in the fat percentage of mother's milk as a factor in feeding, concludes with the following summary:

1. The importance of mother's milk cannot be overestimated. A physician should feel that he is taking the baby's life in his hands in lightly changing from breast milk and should so impress the mother. Besides the immediate danger, which at times is not so great, it lessens the stamina for later years. A right start in anything is essential, but nothing is more important than a right start in life.

2. If there is some disturbance to the nursing infant, the breast milk should be examined, unless some cause, like tuberculosis, is at once recognized. It is not long since patients were pronounced anemic upon looking at them, but to-day the hemoglobin must be estimated. So must it be with the breast milk.

3. Fat is an important factor if only for its variability.

4. The importance of the fats has increased lately since the Breslau investigators give them such an important rôle in infantile atrophy (marasmus).

5. For the most part fat gradually increases in amount from the beginning to the end of a feeding, with occasionally a dip down at the end. As yet there is no proof that the increase is arithmetical. A baby that needs more fat than it is getting can easily be put to the breast after some milk has been pumped out.

6. A fat percentage, within a few tenths of a per cent. of the average may be obtained by taking equal specimens from the beginning and end of the feeding and examining the mixture. This is entirely practicable clinically and should be done.

In scarlet fever the throat, although it has been considered to play an important part in the retention of infection, is probably only rarely the source in the later stages; on the other hand, abnormal conditions in the nasal passages are often associated with signs of retained infection. Otorrhoea undoubtedly constitutes a danger. It seems that the infectious agent is not present in the desquamated cuticle. Apart from this, however, return cases may arise from cases in which no morbid condition has been detected; furthermore, a morbid condition may develop for the first time, or recur, after the patient has been considered recovered. Under these circumstances freedom from infection cannot be definitely ascertained; and it is evident that precautions should be continued after isolation is discontinued. Such articles as cups, handkerchiefs, pillows, sheets, blankets, sofa, cushions, towels, toys and the like, which are liable to come in contact with the mouth or the nose or other persons, may transmit the disease if smeared with infectious secretions. On the other hand, secretion deposited elsewhere cannot, in general terms, come into action until dry and pulverized; and when due allowance is made for the influence of light, dessication and

starvation upon the virulence and vitality of all pathogenic organisms, it must certainly be seldom that germs in dust are received in sufficiently potent dose to cause the disease.—*Medical Times*.

ACUTE RHEUMATISM IN AN INFANT.—Shen-gelidze describes (*Roussky Vrach*, February 5, 1905) a case of articular rheumatism of the acute type in an infant aged about two weeks. The mother suffered from the same trouble while nursing this little girl. The infant had the typical swelling, redness, pain, etc., at the ankle, and at one of the interphalangeal joints, fever, etc. The author found but a few similar cases in literature. He thinks that rheumatism may be transmitted by the mother to a nursing infant. Schaefer believes that the disease may be transmitted through the placenta. It is remarkable that heart complications have thus far not been observed in infants with acute rheumatism, but it is possible that they develop later when these infants are no longer under observation. A noteworthy feature in the case reported was an exudate in one of the maxillary articulations.—*New York Medical Journal*.

## SOCIETY MATTERS.

## OFFICERS, COMMITTEES AND DELEGATES FOR 1906-1907.

## OFFICERS.

President—D. C. Hawley, Burlington.

Vice-President—C. W. Strobell, Rutland.

Secretary—George H. Gorham, Bellows Falls.

Treasurer—B. H. Stone, Burlington.

Auditor—J. H. Blodgett, Saxtons River.

## COMMITTEES.

Executive—D. C. Hawley, Geo. H. Gorham, M. L. Chandler.

Publication—Geo. H. Gorham, G. R. Anderson, C. H. Beecher.

Legislation—F. T. Kidder, H. D. Holton, E. R. Campbell.

Necrology—M. H. Eddy, C. S. Scofield, E. H. Martin.

Anniversary Chairman—J. N. Jenne, Burlington.

## DELEGATES.

American Medical Association—J. Henry Jackson.  
Massachusetts Medical Society—C. E. Chandler,  
C. B. Ross.

Rhode Island Medical Society—S. E. Maynard, W. E. Lazell.

New Hampshire Medical Society—S. W. Hammond,  
F. K. Jackson.

Connecticut Medical Society—John Gibson, C. F. Dalton.

Maine Medical Society—P. E. McSweeney, A. L. Miner.

New York Medical Society—W. W. Townsend, F. R. Stoddard.

White River Medical Society—S. S. Eddy, E. A. Stanley.

University of Vermont College of Medicine—T. R. Stiles, W. N. Bryant.

Dartmouth Medical School—C. S. Caverly, H. S. Carver.

#### THE ANNUAL MEETING.

The Vermont State Medical Society has again held its annual meeting and again it must be said that the meeting was a most successful and profitable one. In point of numbers, the attendance was the largest in the history of the society, there being 109 members present and 63 guests. In the character of the papers and discussion, it seems to one observer at least that improvement has been made over former years. Socially, the gathering was a decided success, and the city of Barre ably demonstrated its ability to entertain a convention of this size. There being lack of hotel accommodation, the committee of arrangements secured in advance a large number of rooms in the best families, so that when the delegates arrived they were at once assigned to comfortable lodgings.

The first session, Thursday morning, was entirely occupied with the reading of reports and obituaries. This last feature is not meeting with universal approval, and it is probable that in future years this will be made a less conspicuous part of the program. Vice-President E. S. Allbee's paper on The Treatment of Fractures, opening the afternoon session, was quite generally discussed, and he was followed by Prof. Egbert LeFevre of New York, whose address on The Treatment of Chronic Cardio-Vascular Diseases, considered at some length the various drugs used in this condition. At this point it was suggested that Dr. H. D. Arnold of Boston be invited to read his paper on Arterio-Sclerosis, the subjects being so closely related. This was done, and the discussion following the two papers resolved itself into a general consideration of the treatment of cardiovascular conditions. Although several more papers had been arranged for the afternoon session, it became necessary on account of the time to postpone these, in order that the House of Delegates might meet.

Thursday evening was the time for the social events of the session, and this part of the program was pre-eminently successful. It was noticeable that the number of ladies present at this meeting was greater than usual, which alone would account for the increased social interest. The banquet, which was held in the Congregational church, and served by the ladies of the church, was as great in variety and as well put on as a hotel function, while the place and general character of the gathering gave a tone which would have been missing elsewhere. Dr. W. L. Havens, the anniversary chairman, had arranged for a program of toasts which would be difficult to surpass in excellence. Gov. Proctor responded to the first toast, expressing his sympathy with the medical profession, and especially emphasizing the need of vigilance in improving the water supplies of the state. He was followed by Lieut.-Gov. Prouty, who seconded the governor's remarks in this regard. Other speakers were Prof. H. D. Arnold of Boston, Rev. A. F. Poole of Barre, Hon. S. Hollister Jackson, Drs. D. C. Hawley, W. N. Bryant, W. S. Nay and A. L. Miner.

At the close of the post-prandial exercises, all adjourned to the Blanchard Block, where Dr. M. L. Chandler gave his president's address on Nephrolithiasis, albeit the hour of 10.30 had been reached before the meeting was called to order. In the meantime, the ladies had gathered in the beautiful parlors of the Vincitia Club, and there the professional

husbands were later welcomed. Orchestral and vocal music was enjoyed to the fullest extent and until midnight the festivities were kept alive, making the evening one long to be remembered by those fortunate enough to be present.

The reading of papers was resumed on Friday morning, following out the program in the order arranged for the previous session. The paper by Dr. H. C. Tinkham on The Care of Surgical Cases, with Special Reference to Abdominal Cases, brought out a considerable discussion, in which many practical suggestions were made. Dr. G. L. Bates' paper on Commercial Therapeutists and Therapeutics, was read by title only. Dr. C. A. Pease followed with a treatise on Tetanus, with special reference to Fourth of July wounds, and Dr. C. H. Beecher read the last paper, Trichinosis, this being a study of the cases of this disease which recently occurred in Bristol and Hardwick. It then became necessary to adjourn the meeting, although several papers, including the symposium on Nephritis, had not been read. It is to be regretted that so many of the good things prepared were necessarily barred out.

The report of the House of Delegates showed something of the complexity of the questions with which the medical profession has to deal. The most discussed topic was that of contract practice, and the considering and reconsidering of this question occupied a large part of the deliberations of the House. The resolution offered a year ago was at first passed with a few amendments, but on reconsideration, the intention of the resolution was so modified that the State Society now goes on record as disapproving contract practice, but does not specify details or penalties. The insurance fee problem also came in for some discussion but received no definite action. The House voted to continue the publication of the transactions in the VERMONT MEDICAL MONTHLY, appropriating the same amount as last year. Another subject of considerable importance was the raising of the fee for membership in the State Society from one to two dollars, the smaller fee apparently not being sufficient to meet the expenses of the society. The election of officers and delegates was conducted with unanimity, and St. Johnsbury was selected as the place of meeting for next year. After the close of the meeting the members were given the liberty of the city. A special train to the granite quarries was taken advantage of by a goodly number, while others went to Montpelier to visit the Legislature.

#### COUNTY REPORTS.

##### LAMOILLE COUNTY.

At the annual meeting of the Lamoille County Medical Society, held in Morrisville on Sept. 26, the following officers were elected: President, E. R. Brush, Cambridge; vice-president, H. W. Barrows, Stowe; secretary and treasurer, S. G. Start, Cambridge; delegate for two years, J. C. Morgan, Stowe; censors, Geo. L. Bates of Morrisville, S. G. Start and E. R. Brush. The society voted to instruct its delegates to the house of delegates to support the resolution in regard to contract practice. Also to use their influence in the state society to pass a by-law or resolution making the minimum fee for life insurance examinations five dollars for all companies, except in cases where the fee is paid by the applicant.

##### WASHINGTON COUNTY.

The Washington County Medical Society has elected Dr. C. F. Camp of Barre, president; Dr. A. C. Bailey of Randolph, vice-president; Dr. O. G. Stickney of Barre, secretary, and Dr. C. E. Chandler of Montpelier, treasurer. This society met Sept. 11 at Montpelier.



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## ORIGINAL ARTICLES.

### TREATMENT OF CARDIO-VASCULAR DISEASE.\*

*By Egbert Le Fevre, M. D., Professor of Clinical Medicine, University and Bellevue Hospital Medical College, New York City.*

I feel almost like apologizing for introducing so hackneyed a subject as the treatment of chronic cardio-vascular disease for the subject in its different phases has been gone over so often; but when your secretary asked me to read a paper before this Society, I selected this, as I felt that there were certain points in the treatment that were not sufficiently taken into account.

The subject is so broad that it will be only possible to consider certain points, and I will limit them to impending and accomplished rupture of compensation in chronic valvular disease and non-valvular diseases, which later are grouped under chronic myocarditis with dilation, arteriosclerosis, cardio-vascular changes of chronic nephritis, senile heart, chronic alcoholic heart, and syphilitic heart.

The successful treatment of chronic cardio-vascular disease demands that we take into consideration, (1) all the etiological factors that occur in relation to the particular case under treatment. (2) The changes that take place in the cardio-vascular system in each type of disease to maintain the circulation, i. e., the process of adaptation and compensation. (3) The subsequent events or the factors that have destroyed the compensation or disturbed the equilibrium of the circulation in each individual case. (4) The ability to select the proper means to aid in maintaining the equilibrium between cardiac power and the work to be performed.

It is difficult, and often impossible in many cases, to determine the etiological factors that have been active, either directly or indirectly.

The relation of rheumatism, the acute exanthema and pneumonia to valvular lesions is generally easily determined, as the cardiac complications occur either during the course of these diseases, or soon after. The causes that have produced non-valvular affections are obscure, and it is often impossible to determine if the myo-cardial condition is due to (1) sclerosis of the coronary arteries, (2) arteriosclerosis, (3) renal disease, (4) alcoholic habits, (5) syphilis, (6) heart strain or (7) cardiac neurosis, unless the history of the case helps us out. The taking of a proper medical history bids fair to become a lost art both in medicine and surgery, as so great reliance has been placed on other methods of diagnosis. To elicit a satisfactory history takes more skill, tact and patience than the cross-examination of a witness by a lawyer. Histories of cases that are published, while often voluminous, do not show the relation of the etiological factors to the diseased condition. In determining the causes that have been operative in any case, the most probable ones should be considered, not the possible ones.

In estimating the effect on the cardio-vascular system of any etiological factor, whether disease, toxemia, mineral poisoning, mode of life, etc., it is necessary to know the effects of the factor, not only on the heart itself, but its influence on the work of the heart, whether it increases or diminishes blood pressure, or tends to make the vasomotor system more irritable. It is also necessary to determine what etiological factors are still operative, for rarely is a chronic disease due to a single cause. In the majority of cases there has been a series of factors concerned, the condition being inaugurated by one set and kept up or modified by others.

In the treatment all the causes should be corrected as far as possible, and if preventable, guarded against. Where rheumatism has been the cause, all rheumatic manifestations should be promptly treated; and in children with marked rheumatic tendency a course of sodium salicylates should be given, if they suffer from cold, sore throat or any other premonitory

\*Read at the annual session of the Vermont State Medical Society at Barre, Oct. 11 and 12, 1906.

symptoms of rheumatic attack. In many children persistent hyper-tension appears to be a hereditary condition. When the family history shows that arterio-sclerosis has been present, cardiac strain of athletic sports, etc., should be prevented by regulating the amount and kind of exercise.

It has been the experience of every one in this audience to have seen many cases of severe cardio-vascular disease in which the patients were unconscious of any defect, who lived an active and laborious life without any discomfort, and we have marvelled how it was possible for the altered circulation to meet the demands of the life they were leading. We have also been surprised and chagrined that under treatment intended to bring the circulation to a normal condition the patient has begun to suffer from symptoms of his disease. We cannot treat successfully unless we know how in "compensated" cases the mechanism of the circulation is changed to meet the altered condition of the vascular system.

Paradoxical as it may seem, there is a normal circulation for every abnormal condition of the cardio-vascular system. Aortic regurgitation may exist for a long time, and the patient be in good health and free from symptoms; although to the most casual medical observer the pulsating vessels of the neck tell of the condition. In this lesion the heart cavity is enlarged and the muscle hypertrophied; the ventricular contractions are strong, slow and powerful, forcing into the aorta a larger amount of blood and sending the wave quickly to the end of the vascular system with high systolic pressure. With diastole there is a sudden fall of pressure. This is the best condition for meeting the needs of the systemic circulation, while protecting the heart during diastole. The hypertrophied heart with its increased tonicity is adapted to stand the dilating force of the regurgitant stream and that from the auricle.

In aortic obstruction the muscle is hypertrophied, the ventricular contraction is slow and powerful, the pulse wave is small; it lacks the sharp rise of the normal pulse, but continues longer. The entire arterial system is but slightly distended by the ventricular contraction, the pulse pressure varies but little between systole and diastole.

In mitral obstruction there is high pulmonary and low systemic blood pressure; the pulse

is slow and small. In compensated conditions the burden falls upon the right ventricle, while the work of the left is less than normal, but during diastole the left ventricle exerts a marked suction action and draws the blood through the narrow orifice, and the prolonged diastole is adapted to the needs of the slow-filling left ventricle.

In mitral regurgitation the burden also falls upon the right heart and the pulmonary circulation. The cavity of the left ventricle is both hypertrophied and dilated, so that at the systole the heart rapidly empties itself, and thus drives a greater amount of blood into the aorta than it would if the contraction were slower. In arteriosclerosis and other conditions producing a high blood pressure, the heart hypertrophies to meet the condition, as in all obstructive conditions of the systemic circulation a higher tension than normal is demanded. These changes in the circulation render it necessary that the treatment be adapted to the individual lesion. There can be no routine treatment for valvular lesions.

As was mentioned before, the second great therapeutic problem in the treatment of chronic cardio-vascular diseases is to maintain the compensating cardiac hypertrophy, and increase the working power of the heart when compensation has been ruptured or extra demands are made on the heart through the progress of the disease or intercurrent affections.

Cardiac hypertrophy in these diseases is a conservative process; it is nature's attempt to adjust the circulatory mechanism and when she succeeds the patient goes on the even tenor of his way unconscious of the fact that he has a heart until the balance between supply of, and demand for, cardiac power is destroyed.

The unceasing and increasing demands upon the heart call for a corresponding increase in the cardiac power. Muscle hypertrophy keeps pace with the work as long as the supply of nutrition is sufficient.

While the hypertrophy of the cardiac muscle under these circumstances is not a pathological condition *per se*, still the hypertrophied heart has less reserve force than the normal heart and the greater the hypertrophy the less the reserve. Inevitably the point is reached when the forcible and enlarged heart has exhausted all its reserve and any added burden must cause it to dilate.



Our object should be to maintain the nutritive processes at the highest possible point. Whenever the patient's general condition retrogrades, the cause should be looked for, removed if possible, and the patient built up by suitable means. It is only necessary to mention cod-liver oil, iron, arsenic, the bitter tonics, as adjuvants to good food and fresh air.

Equilibrium of the circulation may be disturbed by (1) increase in the work demanded of the heart, or (2) the work remaining the same, failure of cardiac power. These two factors are usually associated, and the therapeutic problem is the choice of means to lessen the work and increase the working power of the heart.

The work of the heart may be increased temporarily or permanently by higher blood pressure. Since instruments for measuring blood pressure have come into general use, our knowledge of the variations of arterial tension has been greatly increased, and the influence of the toxemia of infectious disease, of auto-intoxication from the intestinal canal, of perverted metabolism of mineral poisoning, of the gastro-intestinal reflexes and emotional causes, are better understood.

The blood pressure is permanently raised in arteriosclerosis, chronic nephritis, and in cases without any characteristic symptom of either of these two diseases; where it seems to be an individual characteristic or dependent upon some unknown cause.

The diet of patients with chronic vascular disease should be simple, but nutritious. It should be a mixed diet. The integrity of the cardiac muscle depends upon its nutrition. In cases associated with arteriosclerosis or chronic nephritis, damage is often done by restricting the diet too much in the attempt to protect the kidneys or arrest the changes in the arteries. It cannot be too strongly emphasized that when either of these conditions exist to a marked degree, the welfare of the patient depends upon the sustained cardiac power. There should be no over-loading of the stomach, or over-tension by taking a large quantity of aerated waters, bulky foods or foods causing flatulency; many a life has been suddenly terminated by an attack of acute indigestion with distended stomach.

The influence of abdominal reflexes is not taken sufficiently into account; toxemia from

faulty digestion should be relieved by purgation and free diuresis. Mercurial cathartics followed by a saline have a wider action than merely relieving the bowels. In arteriosclerosis and nephritis the persistent high pressure is still further increased by above conditions which cause spasm of the blood vessels, and upon our power to protect the heart from sudden strain depends the period of cardiac compensation.

Since our attention has been called to the evil effects of high tension the use of drugs that have the power to lower it has become a routine practice. Rarely is a prescription given for loss of compensation in which nitroglycerin or some preparation of the nitrites is not an ingredient. The introduction of the nitrites and nitro-glycerin have given us powerful agents to influence the blood pressure and to relieve many of the dangerous symptoms and dangers of the cardio-vascular diseases; but I am thoroughly convinced that great harm is done by their present injudicious use and routine administration. Certainly the symptomatology of cardiac disease has been changed since their introduction. The anginal type is more common and occurs earlier. There has been a neglect of measures and drugs which relieve blood pressure more permanently. Patients are tempted to over-tax their hearts, knowing that the distress produced by over-exertion can be relieved by the handy nitroglycerin tablet.

I know this is contrary to much of the accepted teaching and that large and frequently repeated doses of nitro-glycerin and the nitrites are recommended in all stages and types of cardio-vascular disease.

The action of these drugs is very transient, that of nitrite of amyl passing off in 10-20 minutes; the action of nitroglycerin and sodium nitrite reach their height in 10-25 minutes respectively, after which their effects rapidly subside.

Members of the nitrite group affect the blood pressure profoundly, but only temporarily and are followed by reaction, as shown by the increased arterial spasm under slight reflex irritation or physical exertion.

In the different types of cardio-vascular disease adaptation and compensation include proper vascular control. In aortic regurgitation the greater velocity of the current of

blood through the aorta and large vessels insures a good systemic circulation, and the low diastolic pressure protects the distensible ventricle. Any disturbance of this condition, especially high blood pressure during diastole would be dangerous, and it would seem as if the nitrites were the ideal drugs to prevent the dangers of high blood pressure. When the condition of the circulation calls for them, they are powerful means to control dangerous symptoms.

In mitral disease the work of compensation falls on the right heart which is working to the full limit of its capacity, while the left ventricle has less than normal to do. Any failure of compensation by the right heart causes an overfilled venous system. In all conditions where the burden falls on the right heart there is danger in reducing the control of the arteries and arterioles so that the blood passes too quickly to the venous side, giving an empty arterial system and an over-filled venous, and nitro-glycerin must be used with great caution in these cases.

We have no facts to show that nitro-glycerin or the nitrites influence to any extent the pulmonary vessels and so relieve the work of the right heart. The obstruction is not due to spasm of the blood vessels, but to interference with the flow.

In arteriosclerosis and nephritis an increased blood pressure is necessary to carry on the circulation through the contracted vessels and as long as it is maintained at the proper point by the hypertrophied heart, the ordinary symptoms of the disease are absent. The danger is from high tension beyond that demanded by the organism or the opposite extreme, too low tension from any cause. The maintaining of the blood pressure at the proper height in these diseases calls for our best judgment, for if the tension falls too low, there is imperfect lymph distribution, the function of the kidneys becomes impaired and oedema occurs.

The nitrites are not to be given merely because the tension is above the normal. Their transient action limits their use to the treatment of the emergencies that occur during the course of the disease. Their use in large doses at short intervals should be reserved for the terminal stages when all our energies are centered on temporary relief only.

Vascular spasm is an important factor in producing dangerous transient hypertension

and anginal attacks. In many cases this depends upon the condition of the central nervous system, or is caused by exaggerated reflexes, and is made worse by the nitrites. When the hypertension is due to sclerotic change in the blood vessels, the nitrites have no power to cause dilation; they can only act on the hypertension due to the spasm of the muscle tissue in the blood vessel.

In cases where the hypertension is due to vasomotor disturbance and exaggerated reflexes, chloral hydrate influences the circulation most beneficially, not only reducing the tension temporarily, but by its action on the nervous system prevents nervous influences from affecting it. Its use should be limited to cases where there is a well marked nervous element. I have found its greatest value in anginal attacks of aortic regurgitation with exaggerated reflexes and in cases of arteriosclerosis and nephritis, when the high tension was associated with other evidences of uremic toxemia.

Iodine and its salts have long had the reputation of giving relief in cardio-vascular disease. It has been called the "medicine of arteries." Although pharmacologists deny that it has any direct action over blood vessels, clinical experience has demonstrated that in disease of the cardio-vascular system, especially arteriosclerosis, it has the power to lower arterial tension and that it is done without diminishing the force of the cardiac system.

Balfour has called attention to the effect of the iodides in controlling the pain in aneurism. There have been many theories concerning their mode of action; it has been shown to have no vasodilating effect, and the general accepted theory is that it is only useful in disease of the cardio-vascular system when due to specific disease, acting on the underlying syphilitic condition.

Recently at Rhomberg's clinic at Tübingen, the work of Muller and Inada has shown that in continued small doses it reduces the viscosity of the blood by acting on the corpuscles, making the blood more fluid without diluting it.

The influence of the viscosity of the blood on the arterial tension has received but little attention up to the present time, the chief factor of high tension being considered due to the action of the muscle tissue of the arteries and arterioles through the vaso-motor nerves.



Recent investigation has shown that the viscosity of the blood varies greatly in the different diseases, being lessened by the higher temperature in febrile conditions and raised by conditions in which there is increase of CO<sub>2</sub> content of the blood by the rich nitrogenous diet, and wherever the number of red blood corpuscles or their size is increased above the normal.

The work of Burton-Opitz, Fano and Rossi has shown that thyroid secretion lessens the viscosity. These investigations of changes that occur in the viscosity of the blood under the influence of thyreoidin while not conclusive, are still very suggestive of the effect that iodine and its compounds have upon the thyroid glands and arterial tension, and certainly give the hope that a plan of treatment that experience has proven to be beneficial in the cardio-vascular conditions will be established on a scientific basis.

When the kidneys are seriously involved and there is evidence of uremic poisoning, Iodine and its preparations have a tendency to produce oedema of the lungs. The form of iodine to be used depends upon the power of the patient to take it without producing evidences of iodism. The iodide of sodium is generally the best borne, or the Syr. of hydrodic acid. In order that the beneficial effects of the iodides be obtained it is necessary that their use be continued for a long time, but all symptoms of iodism should be avoided by the regulation of the dosage and stoppage for a week or ten days at regular intervals.

Gastric disturbances should be avoided by avoidance of all acids in food and drink while the iodide is being taken. It is frequently necessary to combine sodium bicarbonate with the iodide if there is gastric hyperacidity.

The use of the cardiac stimulants of the digitalis group: (digitalis, strophanthus, convallerio, etc.) in all stages of cardio-vascular diseases calls for special consideration.

Too commonly it is the custom as soon as soon as a diagnosis of any form of cardiac disease is made to administer one of this group on "general principles," without any regard to the individual case and without any well-defined idea why it is given.

During the stage of perfect compensating hypertrophy, digitalis and all members of the group are contra-indicated. But there is a time when it is of inestimable value—when it

acts not as a stimulant but as a true restorative of cardiac power. Sooner or later the time comes when cardiac hypertrophy begins to fail and there is imperfect nutrition of the myocardium. The heart falters in its work, at first only as a result of unusual demands on it, but later slighter causes disturb it.

This is always a critical period from a prognostic and therapeutic standpoint. The case may pass into the stage of permanent cardiac insufficiency, or, under proper management and treatment, compensating hypertrophy may be re-established.

When properly given, digitalis has the power of increasing not only the working power of the heart but its nutrition also. With beginning failure the patient should be put to bed or confined to one floor, according to the severity of the breakdown. The bowels should be freely moved and the diet should be nutritious but of small bulk and dry. For the first few days, full stimulant doses of digitalis or strophanthus every two hours should be given until the heart power is brought to equal the demand. The use of the drug is then stopped for a week or ten days, when it is resumed in the following manner: Five or ten drops of the tincture or a grain of the leaves are given at bed time. In mild cases a course of a week may be sufficient, others may demand it for months before compensation is perfect. After compensation has been ruptured and restored by the use of digitalis, it is necessary that nutrition of the heart be maintained by giving the small nightly dose from time to time. In some cases two or three nights a week is sufficient. Again, the treatment must continue longer, with longer intermission, as one week each month; while some cases need almost constant treatment. I have a patient of 60 years of age whose compensation has been preserved for the past 5 years by nightly doses of five drops of digitalis, twenty nights out of each month.

Digitalis does not act thus happily in all cases demanding cardiac stimulation. It frequently disturbs the stomach or overacts on the blood vessels even when guarded by the vasomotor dilators or the iodides. In these cases, I am accustomed to administer tincture Strophanthus in three to five drop doses combined with two to four drams of Mist. Basham U. S. P.

There is great difference of opinion concern-

ing the use of Digitalis in aortic regurgitation, most writers, while extolling its value in other valvular lesions, warn against its use in aortic regurgitation and those who do advise it to be used, always add a word of caution.

The arguments against its use are that (1) by slowing the heart and lengthening the period of diastole it allows a longer time for the regurgitant stream to act and (2) by acting on the arteries it raises arterial tension and so adds to the work of the heart. As a proof of its danger, cases of sudden death after its use are cited, but *post hoc* is not always *propter hoc*. If digitalis slows the heart below the normal rate it is doing harm, and the tendency of digitalis to do this when pushed too far must always be kept in mind. The pulse of compensated aortic regurgitation is regular, strong, and slow, with high systolic and low diastolic tension. When the systole is not strong enough to drive the blood wave to the periphery with sufficient force to meet the demands of the systemic circulation then the needs of the organism are reflexed to the arteries which contract and raise the diastolic pressure in the attempt to correct the defect.

If slowing of the heart was the only effect of digitalis on the diastole, then it would be as dangerous a drug to use in aortic regurgitation as aconite. All are agreed that under the influence of digitalis "the muscle tone is increased and that thereby the relaxation of the muscle is rendered less perfect, and the contractions more complete and prolonged." In aortic regurgitation upon the tonicity of cardiac muscle depends the question of dilatation. When digitalis is given, while the period of diastole is lengthened, the cardiac muscle relaxes more slowly, and the ventricle is thus protected from the dilating effect of the regurgitant stream.

Its action on the arterial muscle tissue is much less than that on the heart and clinically its action on the overdistended muscle of cardiac dilatation, provided it is not degenerated is much greater than on normal muscle.

The fear that digitalis will act too energetically on the vessels has led to the routine practice of combining nitro-glycerin with the digitalis. I believe the plan is, in the main, a bad one; certainly the practice of using ready made tablets. The time of action of the two drugs do not correspond. If it is necessary to use any of the nitrite group they

should be administered when their effects are needed.

Digitalis is not a quick acting drug; in ordinary cases it is only after 3 days that its effects are noted, especially its action on diuresis.

Strychnine also has the power to increase the tonicity of the cardiac muscle as it does the skeletal, but its action is through the nervous system and not as the digitalis group by any selective action on the cardiac muscle fibre. Its effects on the vasomotor system is greater than digitalis. It is necessary to keep in mind the mode of action of these two drugs in cardiac therapy. Our selection by one or the other will depend on our judgment of the best way to influence the muscle.

Where the vasomotor system is unduly active and the tension varies greatly under different conditions, strychnine does harm. The nervous, apprehensive and excitable patient is made more so by its use. When the reflexes are blunted as in the chronic alcoholic, or when the digitalis group has lost its power, strychnine is useful. While the digitalis group is generally considered as a whole in the discussion of cardiac therapeutics, still it must be remembered that while the action of the different members of this drug is somewhat similar, they do not affect the same portions of the neuro-muscular mechanism of the heart, and when the heart fails to respond to one member of the group that has been used for some time, the desired effect can be obtained by using another member of the group or by combining the members.

Much has been written in recent years of the effect of baths, especially those charged with carbonic acid gas either alone or in combination with resistant exercise, the so-called "Neuheim Treatment," and many enthusiasts have claimed specific action for this plan. This treatment is useful in convalescence from acute cardiac disease preliminary to return to active life, also in cases where the circulatory symptoms are due to disturbed metabolism, especially in those who take too little exercise and eat too much, in the anaemias with cardiac disturbance, especially chlorosis, and in cases of chronic valvular disease where failure of compensation has occurred as the result of some intercurrent disease.

When myocardial degeneration is well marked and is the result of progressive failure of nutrition, especially that which occurs in



connection with arteriosclerosis and sclerotic kidney, the Neuheim treatment is contra-indicated. It can only do good when peripheral circulation responds and the work of the heart is relieved through dilatation of the capillaries of the skin. If this response does not take place the work of the heart is increased and damage occurs. Great harm has been done by sending to Neuheim cases in the terminal stage of cardio-vascular disease.

Time does not permit to discuss other means of treatment. I wish only to mention briefly the management of cardiac failure when oedema has occurred. When cardiac incompetency first takes place the oedema is a relief to the circulation as it withdraws a certain amount of fluid from the blood mass; later when the pressure in the tissues from the oedema becomes greater and the viscosity of the blood and lymph is raised, it is a direct cause of increased peripheral resistance, while the greater blood mass still further embarrasses the heart and the over-filled venous system interferes with the action of the kidneys, causing scanty urine. Frequently in this condition attempt is made to increase the action of the kidneys and relieve the oedema by giving large quantities of water or the saline diuretics well diluted with water. This only increases the water content of the blood and as the cause of the scanty urine is the embarrassed circulation, it increases the oedema.

The most important indication for treatment in cardiac failure with oedema is to reduce the blood mass. This is best done by restricting the amount of fluids taken, placing the patient on the so-called dry diet, acting freely on the bowels by the purgatives, especially the concentrated saline purgatives.

The action of the saline purgatives upon the watery content of the blood varies with the mode of administration. When given in concentrated solution their power to hold in the intestine fluid drawn from the blood vessels is great; when, on the other hand, they are given in diluted form, while they have the same purgative action, they do not influence the amount of water contained in the vessels or tissues.

I cannot refrain from saying a word of caution about sending patients with a failing heart to the various mineral springs and allow them to drink the water *ad libitum*. Unless their kidneys respond and increased diuresis occurs, or the water has a marked purgative action,

there is an increase in the watery content of the body, overfilling of the blood vessels and the occurrence of oedema. If oedema has already been present, there is generally a marked increase.

Widal and Javal have called attention to the effect of the retention of sodium chloride in the body in cases of oedema, either due to preliminary kidney disease or the congested kidney of chronic vascular lesions and they have shown that under a salt free diet there is a rapid decrease in the amount of oedema. Personal experience in these cases has demonstrated the value of limiting the amount of salt taken by the patients, either as food or in the form of beverages. It is almost a routine practice in cases of cardiac disease showing any interference with the function of the kidneys to put the patient on the different saline diuretics or to encourage them to drink water rich in sodium chloride for the diuretic effect. If the kidneys respond to the increase in the amount of water, or to the salines contained in the diuretic mixture, the oedema may be reduced, but this rarely happens in cardiac cases where the oedema occurs as a result of failure of the circulation.

When chronic vascular disease occurs in early childhood there is a tendency for the condition to become worse as age advances. Children grow out of cardiac conditions as well as into them. There are two periods of life that are critical in chronic vascular lesions that have occurred in early life. One period is between 5 and 7 years of age according to the individual. At this time the heart is changing from the infantile type. If the child is carefully watched, many cases improve, cardiac compensation occurs and in some cases the murmurs that were very pronounced during the early years almost entirely disappear. The second critical period is at puberty. The changes in the circulation at this period are most marked in the female. The enlargement of the thorax and the increase in the size of the aorta is associated with increase in the size of the ventricular cavity. Cases of mitral stenosis are especially liable to suffer at this period and bronchial hemorrhage is a frequent symptom. Children should be watched at these two periods; their mode of life, their exercises and their attendance on school should be regulated according to the vascular condition. If there is a tendency to non-develop-

ment of the thorax at puberty suitable exercise should be prescribed that should cause this development without overtaxing the heart. The breathlessness that so frequently occurs at the time of puberty has a definite physiological basis dependent upon cardio vascular development which should be recognized in the treatment of vascular lesions.

### **TREATMENT OF PNEUMOCOCCIC INFECTION OF THE LUNG.\***

*By F. C. Ligouri of Barre, Vt.*

Today I wish to discuss with you the management of one of the most important of the acute infectious diseases. I refer to pneumococic infection, or, as it is more commonly called, croupous or lobar pneumonia. The designation pneumococic infection is preferable to croupous or lobar pneumonia chiefly for the reason that the inflammatory lesions in the lung may be the smallest part of the process going on in the body, and because the extent of the lung involvement has not much to do with the severity of the illness of the patient. It is important to bear in mind that the local lesions in the lung are accountable for some, but not for all, of the patient's symptoms; that the patient ill with croupous pneumonia is suffering from the general infection with the pneumococcus; that organs other than the lungs may reveal morbid lesions at least as well marked as the local pulmonary lesions; that in some cases these other lesions are susceptible of recognition; and that the severity of the clinical manifestations in a given case depends upon the virulence of the infecting pneumococcus and the resistance offered by the patient. Thus we find that the extent of the local lesions, be they in the lung or elsewhere, bear no necessary relation to the severity of the general symptoms; on the contrary, are an expression of the toxemia. Hence it is that of two patients with the same extent of lung involvement, the one will present little or no toxemia, while the other will be extremely toxic. The observation of large numbers of cases has taught us that the dangers to be apprehended in pneumonia are due almost entirely to the toxemia, and that in 90 per cent. of the fatal cases death results from toxemia,

and not from extent of lung involvement or mechanical embarrassment of the circulation.

In the treatment of all disease conditions it is well to proceed upon a definite basis, remembering, however, that we are treating a patient rather than disease, and that we shall have to modify our treatment in accordance with certain well recognized principles depending upon the peculiarities of the patient and the exigencies of the case. Indications for treatment should be sought in, and our treatment based upon, (1) the diagnosis of the case; (2) our conception of the morbid process; (3) the symptoms of the disease; (4) the results of an examination of the different organs and structures of the body; and (5) suggestive facts that we may elicit from the social history, the family history, and the previous medical history of the patient.

Proceeding upon this definite plan, the first indications of treatment are based upon the diagnosis of the case. In the event of certain diseased conditions, such as syphilis, etc., we have immediate recourse to certain well recognized specifics; that is, the diagnosis carries with it a positive indication for a certain specific remedy. It matters not what the character of the disease, whether or not it be attended by complications, nor whatever else we do, we administer at once the specific remedy. As regards pneumococic infections, or croupous pneumonia, have we a specific? The only remedy for which specific properties are claimed is the so-called anti-pneumococic serum. Of this it may be said that its real value has not been definitely determined, and the general professional opinion is one of hope rather than of satisfaction.

The next indication for treatment is based upon our conception of the morbid process. As I have already intimated, croupous pneumonia is a general infection with the pneumococcus and a local inflammatory lesion in the lung. Based upon this conception of the process, our endeavors should be directed (1) toward arresting, limiting, or modifying the extent of the local inflammatory lesions in the lung, since it is here that the toxins are manufactured; (2) toward assisting nature to eliminate the toxins; and (3) toward counteracting the effects of the toxins. With regard to arresting, limiting or modifying the extent of the local inflammatory lesions, it is important to bear in mind that, although the pneumo-

\*Read before the Washington County Medical Society.



coccic infection is a general process, there is nevertheless a local lesion in the lung that by no means is to be ignored. By controlling this, we benefit our patient to a very great degree. Suppose then, that we are called to see our patient within the first 24 hours of his illness. We detect in all probability evidences of infection or toxemia—fever, furred tongue, probably some gastritis and constipation, and possibly certain symptoms that suggest local disorder in the lungs. There are as yet no physical signs of involvement of the lung; we are not able to say which lung is or is to be affected nor how extensive the local inflammation may become; although we may be quite certain that the patient is in the first stage of pneumococcic infection of the lung, or croupous pneumonia. What shall we do? We reason that inasmuch as the process is inflammatory, we should, as in all inflammatory conditions, lower the blood pressure. We endeavor to control the degree of congestion in the lung by diverting the blood elsewhere in the body. The most serviceable way to lower the blood pressure in these circumstances is by means of laxatives, of which calomel and the salines are the best. In most cases I am in the habit of using calomel for two reasons—because of its well known laxative effect and because it is a local antiseptic. The pneumococcus, the cause of the infection, as is generally known, is found in the mouth of even healthy individuals; in those ill with pneumonia it is found in the mouth and the upper air passages in increased numbers, and it is truly pathogenic. If, then, we administer calomel in such a manner that it may exert its local antiseptic action, we take steps toward preventing the spread of the local inflammation and toward reducing the degree of the toxemia. Ten grains of calomel should be given dry on the tongue. The patient should be asked not to swallow it, but to allow it to mix with the juices of the mouth so that it may come in intimate contact with the mucous membrane of the mouth, fauces, and the upper air passages, whereupon it may be swallowed. There is no occasion for repeating the dose but the use of the remedy is unquestionably of service. In addition to exerting a local antiseptic action in the mouth, by the reason of its laxative action it serves to lower the blood pressure and to reduce the frequency of the heart's action and the respiration rate.

Furthermore, we may control the inflammatory lesions in the lung by means of certain local applications. Of these, dry cups are the best. In the early stages we may be uncertain which lung is affected; put the cups on both sides, and put on about 10 or 20 cups. I have the greatest confidence in the use of dry cups applied over the chest—first generally, and later locally, over the seat of lung involvement. Cup when you are called to see the patient; and if, when you are called later in the day or in the evening, an improvement is not marked, cup again. Repeat the cupping twice or thrice in the first 24 hours, and twice in the second 24 hours; and if on subsequent days you detect congestion of a portion of the lung previously uninvolved, cup again over the particular region. You will find that the cupping relieves the pain to a very great extent, and that in almost every case it relieves the breathing.

In addition to the cupping the local use of cold is of great service. This may be applied either by laying cloths on a block of ice and then upon the chest, by laying cloths wrung out of ice-water on the chest, by the use of the ordinary ice-bag, or the rubber or Leiter coil through which cold water is made to circulate. We may use the cold continuously or intermittently. The latter is the preferable way. Personally I have been very well satisfied with Baruch's method. Baruch directs that the chest be enveloped with a cotton or linen jacket wet with water at a temperature of 60° F., and then covered with a flannel bandage. This is allowed to remain on until the patient's temperature falls to 100° F., whereupon the ordinary jacket is substituted. This procedure is to be repeated should the temperature again become high.

There is some evidence that the local use of cold controls somewhat the local inflammation in the lung; certain it is that it promotes the well-being of the patient. To such a degree does it relieve the pain, commonly of a plural origin that the patients ask for it. But it is of special service in counteracting the effects of the toxemia. Each application of cold deepens the respirations and lessens or dissipates the hypostatic congestion of the lung that has developed in consequence of a little failure of the heart.

The heart action is stimulated, and in consequence of this and the improved breathing

there is better oxygenation of the blood; cyanosis which had developed is soon lessened, delirium grows less, the temperature falls, and other manifestations of toxemia diminish. I am confident that I have witnessed the greatest amount of good follow this method of stimulating the cardiac and respiratory mechanisms by what may be looked upon as the heroic application of cold. In the use of these ice-water applications it is essential that the patient react. We expect that the ice-cold cloths get warm in a very short time and when they have become warm they must be changed. Should they not become warm it is an indication that the patient has not reacted, that they are doing no good, and therefore they should not be continued. In the latter stages of pneumonia hot applications, which possibly promote resolution, are sometimes more efficient than cold applications. These may be merely flannel cloths wrung out of hot water and sprinkled with a small amount of turpentine or a flaxseed poultice, or even the old fashioned cotton jacket.

We have now accumulated considerable clinical and experimental evidence that goes to show that the degree of toxemia in an infectious disease, depends upon the activity of the kidneys, that the toxins are more freely liberated by the kidneys than by the skin or the intestinal tract. With a view, then, to assist nature to eliminate the toxins, we endeavor to keep up the action of the kidneys. We recognize that the renal activity depends upon strength of the heart, and this upon the tone of the nervous mechanism that controls the heart and the blood vessels.

We favor the elimination of the toxins by keeping the circulation active, and thus promoting free diuresis. For this purpose, I am in the habit of ordering strychnin, 1-60 to 1-40 grain every four hours. This is a routine prescription of mine in all cases of pneumococcic infection, and I began with a small dose under the impression that I shall probably have to increase it, but with the idea of fortifying the circulation against the deleterious effects of the toxins that are sure to develop. Furthermore, when the renal secretion diminishes, and the daily amount of urine falls below the normal, I instruct the nurse or the attendant that the patient be given large amounts of wa-

ter; I see to it that certain amount is given at stated intervals, so that a total quantity of two or three quarts is given in 24 hours. In many cases it is preferable to use some good lithia water, or other water that contains a moderate amount of saline. Finally with increasing high temperature and progressive increase of the toxemia, we can not do better than resort to additional hydrotherapeutic measures. The particular procedure depending upon the conveniences of the household, the degree of relief afforded, and the response secured.

In some cases we find that the foregoing measures do not suffice, or, having been of avail in the early stages of the disease, later they lose their efficacy; the renal secretions lessen, vascular tension becomes reduced, and the pulse weak and dicrotic. The toxemia has increased, its pernicious effects are more manifest. Under these circumstances the strychnin should be increased to 1-30 grain four times daily, and to this we may add a moderate dose of caffein, one to two grains three times a day. In a case of pneumococcic infection, if the daily amount of urine falls below 40 or 30 ounces I begin with the injection of salt solution into the rectum, from 500 to 1,000 c. c. once or twice a day. There is an immediate increase in the amount of urine, and a concurrent lessening of the frequency of the heart-beat, and an increase in the strength of the pulse; the delirium lessens, the temperature falls a little and the respirations become less frequent and deeper. If the toxemia is not relieved, if the heart-beat becomes more rapid, and the respirations increased, I immediately resort to the injections of salt solution under the skin once or twice in twenty-four hours. Although we may scarcely look upon hypodermoclysis as a specific in the treatment of pneumococcic and other infections, it is one of the most serviceable means of treatment at our command. A simple solution of ordinary salt, a teaspoonful to a pint of boiled water, may be used and injected at a temperature of 100° F.

When the pernicious effects of the toxins are becoming marked, it becomes necessary to use other measures to counteract their effects. In these circumstances preparations of ammonium are also of service such as carbonate of ammonia, muriate of ammonia, and the carbonate of creosote. Of these the carbonate of



creosote have give me more satisfaction, using the formula after Dr. Thomson, which is as follows:

R. Creosote Carbonate  $\bar{3}$  iv.  
Glycerini  $\bar{3}$  i.  
Aquae Menthae O ss.  
Sig. Tablespoonful in water every  
2 hours.

If the patient be an alcoholic subject, you can not begin too soon with the administration of alcohol, nor is it likely that you can give too much. If, however, the patient be a non-alcoholic subject, you must be cautious with alcohol, preferring to reserve it for a period that may come later in the disease when you want to tide the patient over a critical period, say 12 or 24 hours. In the ordinary case, I rarely use alcohol; in fact, I never use it if I can avoid it, and when I do use it I usually do not exceed two or three ounces in 24 hours. When there comes a time that I feel that I have only to keep the patient alive for 12 or 24 hours to get him to the crisis, I frequently increase the dose, or I substitute brandy or champagne. Champagne is a splendid stimulant for a short time, and usually agrees well with the patient, unless contraindicated by gastritis or other conditions.

In a given case, basing our treatment upon the suggestions that I have already it must be apparent that we are doing about all that we can to relieve our patient. It usually becomes necessary, however, to seek indications of treatment in the symptoms of the affection in the individual case, and it is always necessary to bear in mind that our treatment should be influenced by the results of an examination of all the organs of the patient.

Of the symptoms which of themselves may demand treatment, pain is probably the most important, certainly in the early stages, when it is sometimes extremely urgent. Although a symptom that we like to see in pneumonia, since absence of pain is significant of failure to react to the pneumococcic infection, the pain itself is distinctly depressing and should be mitigated. It is commonly situated at the lower part of the chest. Should the local external applications previously mentioned not suffice to relieve the pain, we must have recourse to anodynes internally. Of these the most efficient is unquestionably some form of opium. I prefer morphin hypodermatically and in moderate doses, but sufficient to relieve

the pain. After the first 24 or 48 hours, however, we rarely feel called upon to administer opium on account of its tendency to lessen the secretion of urine, which after this time is likely of itself to diminish as a direct consequence of the toxemia. In the early stages, however, opium is of distinct value; it sustains the circulation, lowers the blood pressure and prevents the shock incidental to pain. In some cases, paragoric, deodorized tincture of opium, or Dover's powder, may suffice to relieve the pain. As a matter of fact, Dover's powder is frequently of excellent service, relieving the pain and promoting a mild diaphoresis. It may be given alone in doses of two grains every three or four hours, or it may be combined with certain other analgesics and stimulants. Should the pain be associated with severe coughing, it may be controlled by codein in  $\frac{1}{4}$  to  $\frac{1}{2}$  grain doses, or heroin in 1-12 grain doses, every three or four hours.

Delirium is the next most important; it is usually an expression of toxemia and measures that promote elimination, diuretics, diaphoretics, and laxatives. Of these, I have already mentioned several, especially strychnin, which in these cases should be administered hypodermatically, and alcohol, which in these cases is often of service.

In certain severe cases a condition arises that is difficult to distinguish from true meningitis. The head is retracted, the muscles of the neck are stiff, and from time to time slight convulsions occur. If conscious, the patient complains of intense headache, and if unconscious, makes various motions indicating that there is pain in the head. There is photophobia, intolerance of noises, and occasionally *tache cerebrale*.

The diagnosis under these circumstances is sometimes a matter of considerable difficulty, especially when we remember that many cases of meningitis are due to infection with the pneumococcus, and that meningitis may arise as a complication of pneumococcic infection of the lung. If the symptoms are mild and there is reason to believe that the condition is only that sometimes spoken of as "wet brain," it is scarcely necessary to do more than apply an ice cap to the head.

In some cases, a most serious and important complication occurs—failure of the circulation. This is due to the toxemia, to the action of the toxin on the nervous and muscular

mechanism of the circulatory apparatus, and may be hastened or rendered more serious by pre-existing disease of the heart. When due merely to toxemia—that is when occurring in young subjects previously robust,—our object should be to combat the toxemia and to promote its elimination by the measures previously mentioned. At the same time we endeavor to tide the patient over the critical period by resort to different cardiac stimulants, a number of which have already been mentioned. In addition, in some of these cases, good results attend the use of nitroglycerine, if there is high blood pressure or digitalin hypodermatically, in 1-12 grain doses, if the blood pressure is low.

Cases in which there is a good deal of associated bronchitis, especially in old people, require careful management. If there is much secretion, atropin judiciously administered in small doses may be of much benefit. In these cases, also, preparations of ammonium are of value, not because of an influence that may exert upon the pneumococcic infection, but because of their effect on the bronchial inflammation. The chloride, and carbonate of ammonia are especially to be commended.

The gastro-intestinal tract demands attention throughout the course of infection. When nausea and vomiting occur in the early stages of the disease, they may be relieved by restricting the diet to milk for a short time, by a small dose of calomel and possibly a little bismuth. Watch the toxemia, the nervous system, the heart, and also the intestinal tract as later intestinal symptoms are more serious. In many cases death results from the extreme tympany interfering with cardiac and respiratory action. Upon the first evidence of tympany or colitis, use moderate purgation, and then wash out the lower bowel using either a normal salt or boric acid solution, once or twice a day. Should colitis develop, it may be controlled, if slight, by bismuth and by the saline injection, with an enema of starch water to which 5 to 10 drops of tincture of opium may be added. Or a mild antiseptic mixture by the mouth will be of service.

From the social history of our patient we may sometimes derive indications of treatment. Thus, in the old we resort more quickly to stimulants than in the young, and we give larger amounts of alcohol to alcoholic subjects. The previous medical history of the patient,

such as a previous attack of endocarditis, or a previous attack of pneumococcic infection itself, causes us to modify both our prognosis and our treatment accordingly. And the same may be said, also, of certain facts that we derive from the family history of the patient. It is doubtless unknown to you that some families seem especially susceptible to infection with the pneumococcus, and that the members of such families are more likely to die than others. In this respect our prognosis and our treatment must be modified.

Finally, I need only say that the diet of the patient ill with a pneumococcic infection should be substantial, nourishing, easily digested. Fluids, especially milk, are preferable in the early days, but later certain soft articles may be added.

In conclusion, I beg you to remember that each case of pneumococcic infection is a law unto itself; that as yet we have no routine treatment upon which we can rely as we do upon the cold-bath treatment in typhoid fever; that we must treat each patient partly with reference to the peculiarities of the infection, partly with reference to his or her personal idiosyncrasies, and partly with reference to the complications which may arise; and that therefore you should have at your command abundant resources that will enable you to change your treatment from day to day should the exigencies of the case demand it.

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### **TETANUS, WITH SPECIAL REFERENCE TO FOURTH OF JULY INJURIES.\***

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*By C. A. Pease, M. D., Instructor in Medicine and Neurology, University of Vermont College of Medicine, Burlington, Vt.*

Tetanus is a disease which affects chiefly man and the horse. Clinically, it is characterized by the gradual onset of attacks of general clonic and tonic spasms of the voluntary muscles, that increase in frequency as the disease advances until they succeed each other in rapid succession. There is often towards the end of the disease fever and increased frequency of pulse and respiration. While necrosis is essential for infection, neither the incubation, the onset, nor the severity of the attack is

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strictly dependent upon the amount of visible destruction of tissue or suppuration which takes place. Minute quantities having such a powerful poisonous effect that slight development of the bacillus is required for a fatal dose. This is frequent, especially with blank cartridge wounds, although they often times have a general streptococic infection.

The bacillus of tetanus was discovered by Nicholaier, in 1884, and obtained in pure culture by Kitasato in 1889. It is commonly found in garden earth, dust and manure, and constantly in the intestinal canal of herbivorous animals, probably from its ingestion with earth attached to the food cropped from the ground. One writer reports cases of death from tetanus without a previous wound, and the intestines were rich with the bacilli; he is of the opinion that they can grow and be absorbed in the intestines where imperfections of the mucosa exist, but does not think that bacteria growing in the intestinal canal can elaborate enough toxin to produce the disease by absorption, cases being reported where 300,000 times the fatal hypodermic dose has been injected without producing symptoms, the toxin seeming to pass in the feces.

The spores develop rapidly with the appropriate anaerobic condition, and the presence of aerobic bacteria in the injured area favors the development of the tetanus bacilli, their pathogenic power being enhanced by mixed infections. The bacilli are long and slender and if they do not have spores rarely unite in pairs or chains, are motile and may show long spirals and flagella. Sporulation occurs in twenty-four to forty-eight hours, forming terminal spores with drum stick enlargements. They are obligate anaerobic, stain with the ordinary stains and Gram's method, man, horse, sheep, guinea pigs and white rats and mice being susceptible; ducks and chickens are immune; the organism enters the body through a wound, the severity of which has nothing to do with the development of tetanus, for oftentimes it is entirely healed and so overlooked at the time of the development of the disease.

The wounds made by blank cartridges are usually lacerated and penetrating which, with the burned area, makes an ideal soil for the growth of the organism; burned tissue being a particular media for tetanus inoculations, experiments having shown that inoculations into burned wounds are far more virulent than

those into incised wounds. Then too, blank cartridge wounds are received at a time of year when tetanus bacilli are most prevalent, probably because the street dirt that contains the micro-organisms is more widely scattered during the summer months than in the other seasons when the ground is more moist or frozen.

Blank cartridge wounds are penetrating and after passing under the palmar fascia often leave the track sealed, the penetrating object, the wad, striking flat would carry disks of the skin with the dirt that was on it into the wound. Then, too, other bacteria being present remove oxygen and this with destroyed tissue resistance favors the development of tetanus. The blank cartridge wounds with their large amount of introduction of extraneous material are very liable to mixed infection. It is an interesting fact that if the spores of tetanus are introduced into the body freed of their poison, they are promptly destroyed by the phagocytes, however, if this is not done the spores would develop bacilli and begin to manufacture toxin and produce the disease. This suggests that many wounds may be infected with tetanus bacilli, but surrounding conditions rarely enable them to develop toxin enough to cause the disease.

The period of incubation is three to fourteen days, but the fifth to the ninth day is the most common time for its development. It seems from the statistics that the period of incubation in small boys is shorter, requiring less of the toxin to saturate the nervous system. whatever the nature of the toxin is, it is one of the most powerful known, if the susceptibility of men is the same as that of a mouse, the fatal dose of an average adult would be .24 Mmg. or about 7-2000 of a grain. It is generally thought that the toxin has no effect on the sensory or motor nerve endings but acts as an exciter on the motor cells of the spinal cord and also to a less degree those of the pons, medulla, and cerebral cortex. When injected subcutaneously the toxin probably is absorbed into the sheaths of the nerves and finds its way to the part of the cord from which the nerve springs, explaining why the animal usually has spasms on the side inoculated first. However, it is questioned if much absorption takes place in man. Zupnik has brought forward evidence that this is incorrect and that there are two distinct actions by the toxin. Tetanus ascendens always succeed intra-mus-

cular introductions of the toxin and depends upon its direct action upon the muscle itself explaining the rigidity first appearing on the side that the inoculation was made.

The absorption of the poison by the muscle cells depending upon their normal metabolic function, for when the nerves are severed the fixation of the toxin and occurrence of the tonic spasm does not occur. Tetanus descendens results from the entrance of the toxin into the circulation from the cellular tissue and its distribution into the blood, acting upon the central nervous system, especially the spinal cord, manifesting itself in extreme reflex excitability with irregular motor discharges resulting in chronic spasms. There are, therefore, two forms of spasms from tetanus,—Tonic from local action of the toxin, and clonic from the centric action. The trismus and opisthotonos according to Zupnik's theory, depend upon loss of equilibrium of affected muscles. The stronger muscles of the jaw being those that close it, and the stronger muscles of the back those of the erector group.

The very first marked attention called to the development of tetanus, following Fourth of July injuries, was in 1903, when the Journal of the A. M. A. reported 415 deaths from tetanus; 358 of these being from blank cartridge, not the paper caps, as is often thought, for I am not able to find record of any cases from this latter cause. The wounds most frequently occur in the left palm or or thumb and forefinger, the end of the barrel being held in that hand while the mechanism is worked with the right hand; this was the case of an injury that occurred in Burlington, Vermont, last Fourth of July, the boy trying to cock the pistol that was a repeater, when it exploded.

A summary of the accidents and cases of tetanus following these for the past four years, 1903-6 inclusive, is as follows:—

Year.	No. of Accidents.	Blank C. Wounds.	Tetanus.	Deaths from Tetanus.	Tet. from B. C. W.	Percent from B. C. W.	Tetanus from Other Causes.
1906	5466	925	89	75	54	6	60
1905	5176	744	104	87	65	9	32
1904	4169	931	105	91	74	8	55
1903	4449	1309	415	406	363	27	15

The period of incubation in Fourth of July tetanus is very short. The prognosis in cases developing within nine days being unfavorable, after that time there is a better outlook. Of the 415 cases collected by the A. M. A. in 1903, only seven were definitely reported as recovered and at the best the mortality was probably over 95%. Most of the cases recovering had antitoxine, especially four reported by Luckett of the Harlem Hospital, New York, who used the intraspinal injections of antitoxin after drainage of as much as possible of the toxic cerebro spinal fluid.

The question whether tetanus bacilli are present in the blank cartridge or not is a disputed one. The frequency of tetanus from blank cartridge wounds compared with other forms of injury is apparent to every one and yet the examination of the cartridges are for the most part negative. Of 759 blank cartridges examined prior to 1903, no tetanus bacilli were found, nor were there from a series of thirty fire crackers. My experiments thus far have given the following results:—

Guinea pig, No. 1, Sept. 14. Slit made through the skin of the abdominal muscles to fascia, and contents of blank cartridge, that is the wadding and powder put in the opening with sterilized applicator and wound sealed with collodion. Sept. 17, 8 A. M., pig dumpish, no spasm; 11 A. M., tried to eat cabbage leaf, could bite it but could not chew. Clonic spasms continued, next involving hind legs and at 11.30 had general abdominal spasms, opisthotonus and spasms of the diaphragm, spasms gradually becoming more tonic in nature. Pig died at 3 P. M., 77 hours after inoculation. Autopsy showed necrotic area around seat of inoculation not involving peritoneum, examination of pus showed rod shaped bacilli with spores at the end. Fermentation tubes of lactose bouillon were inoculated with discharge from wound heated to 80 degrees C., for ten minutes and put in incubator at body temperature. This generated gas in the tube and gave the odor characteristic of tetanus. Sept. 20, 5 C. C. of this bouillon was injected into Guinea Pig No. 2, with negative results. Sept. 26, 1 C. C. was injected at the roots of a tail of a Jap rat, also with negative results. Guinea Pig No. 3. Injected mixture contents blank cartridge in fascia abdominal muscles, no results.



Guinea Pig No. 4, Sept. 17. Injected 5 C. C. lactose bouillon into which powder and filling of fire cracker had been put 48 hours before and that had a growth suggestive of tetanus. Pig had clonic spasms of abdominal muscles that night but they subsided until September 21, four days later, when commenced to have spasms again and died during the night. At the autopsy no pus was found, cultured seat of inoculation, with negative results. Guinea Pig No. 5, September 20, inoculated 5 C. C. of lactose bouillon that had been inoculated with earth from box stall, heated to 80 degrees C., 10 minutes and growth characteristic of tetanus developed in twelve hours. Pig developed symptoms of tetanus and died during the following night. Autopsy showed little exudate around seat of wound. This was inoculated into lactose bouillon and was developed by Kitasato's method, but animal inoculation was negative.

Tube No. 1. Lactose bouillon inoculated with washing from stable man's hands, with negative results.

Tube No. 2. Lactose bouillon inoculated with washings from Delaney boy's hands, with negative results.

Tube No. 3, September 17. Lactose bouillon inoculated with dirt from front of manure sink, developed growth characteristic of tetanus, no animal inoculation.

October 3. Power and wadding of four blank cartridges of different makes, inoculated into Jap rats at the root of the tail, with negative results.

Besides these experiments, the contents of ten blank cartridges were heated to a temperature of 80° C. for an hour to kill all but spore bearing organisms, and grown under hydrogen, but without results. Six rats were shot with blank cartridges, receiving wounds similar to the wound ordinarily received in the hand, but did not develop any tetanic symptoms. In all 22 blank cartridges were examined with comparatively positive results in one case.

In conclusion, to summarize the results of these few examinations and a review of the literature and serum therapy in the light of laboratory studies, it would seem that the spores of tetanus bacilli are far more common than generally supposed and only require the proper environments for their development. While fairly good results are reported in sub-

acute cases from the use of tetanus antitoxin, yet the mortality in these cases is about 43%, while that of the acute cases is nearly 63%, and in conclusion I can only too strongly urge that all wounds liable to infection by the tetanus bacilli, and especially blank cartridge wounds be treated at once in a thoroughly antiseptic manner and immunizing doses of at least 10 C. C.'s of tetanus antitoxin be injected around the seat of injury.

#### DISCUSSION.

*Dr. William Lindsay, Montpelier:* Dr. Pease has mentioned all the facts I had in mind to speak upon. His series of experiments are exceedingly interesting, and I hope his paper will be fruitful of further experiments and results. I can think of but one point to emphasize, that is the sensitiveness of blank cartridges. They are exceedingly sensitive to percussion. A few years ago, a young lad was rolling a cartridge in his hand with some small stones when the explosion occurred, the wad penetrating between the metacarpal bones. They are very dangerous things to handle and some means ought to be adopted preventing children from using them. In the case of the boy the wound was cleaned and dressed thoroughly, a counter incision being made, but I am satisfied now, that if I had been more thorough in cleaning the wound, the boy might not have had tetanus. I curetted and washed the wound with an antiseptic but did not give an anesthetic whereby I might have cleaned it more thoroughly. I am convinced that we should use the curette and give the wound as careful a cleaning as possible, dress these wounds with moist dressings so that drainage will not be prevented and free access of air to the wound will be allowed. I think it advisable not to tie any vessels in the vicinity of the wound unless they are very large. Dr. Lockart has reported in one of the journals that he continues to use the antitetanic serum, preferably injected into the spinal cord, and he thinks it is advisable to use large doses, frequently repeated, after the attack has begun. The medical journals have been calling attention to the method suggested by Meltzer of using magnesium sulphate, a 25% solution in interspinal injections. It will allay the spasm and has been known to control it from twenty to thirty hours. Our patients die from exhaustion and emaciation, and we should adopt any means which will control the convulsions.

*Dr. H. C. Tinkham, Burlington:* The germs of tetanus are much more common in the dirt of our streets and the grounds adjacent than we suppose. Some years ago when we had the small-pox in Burlington and there were some two or three thousand vaccinations, we had two cases of tetanus. About this time there were quite a number of cases of tetanus reported from different states, all occurring in cases who had vaccination sores. There were so many of these cases that many physicians believed that the tetanus came from infected vaccine virus. It did not seem probable to me that this was the source of the infection, for if the vaccine virus had been infected with the germs of tetanus there would have been more than two cases in approximately three thousand vaccinations. With the idea that the tetanus was a reinfection of the vaccine sore, Dr. Beecher and I made some investigations to determine the prevalence of the germs of tetanus in our city. Dr. Beecher obtained four sterile tubes with culture

media from the state laboratory and in each tube was put a little dirt taken from the ground near the street, one specimen was taken in front of my house, two others from in front of the houses where the children who had had tetanus had lived, and the fourth came from some sand that was taken from a box stall in which a horse had died of tetanus after getting a nail in its foot on the street. We got pure culture of the germs of tetanus in three out of these four cultures. In each case where the dirt was taken from near the street we found the germs of tetanus. The places where the specimens of dirt were taken were from one-half a mile to a mile apart. To leave no doubt in regard to the findings, white rats were inoculated with the germs taken from the tubes, and all died of tetanus. With the germs of tetanus so common in the dirt, especially in and near the streets of our towns, we cannot be too careful in protecting even slight wounds from possible infection with tetanus.

*Dr. B. H. Stone, Burlington:* Tetanus bacilli will not grow in the presence of oxygen. Hydrogen peroxide is a good antiseptic to use in these cases, and in fact it is every bit as good as the bichloride. The thorough cleaning out of the wound with hydrogen peroxide and the injection of antitoxin serum is all you can do to prevent their growth. In any suspicious case you should not use a tight dressing. The dressing should be applied so as to allow as much oxygen into the wound as possible, therefore collodium should never be used. These things follow from the etiology but are apt to be forgotten in dressing these wounds.

*Dr. McSweeney, Barre:* Dr. Maynard made the statement that he could cure all our tetanus cases by preventing them. Sometimes we don't see them until the wound or site of infection has entirely healed, so how are you to prevent them? In September, 1905, a young man cut his finger with a butcher knife. He put a rag around it and paid no more attention to it. Now that was on Friday night. Tuesday morning I was called to see him. He had a temperature and a chill. The thumb was very red, with a streak extending to the elbow. He gave a history of a cut thumb. I ordered an ice pack and gave him something to relieve headache. In the morning the temperature dropped to 103 degrees and he felt ever so much better. This continued for four days, and on the fourth day his temperature was normal, and he said he guessed he would get up and go down street. At four o'clock his wife called me up and said he could not open his mouth. Between the time that she called me and I got down there, he had had a chill and his pulse was 175 with a temperature of 105; his thumb was intensely red and he could not open his mouth and the muscle was rigid. I told him he had tetanus and I telephoned for Dr. Chandler and I gave him tetanus serum. We put him under an anesthesia and split the thumb open; the tissue was infiltrated and a dark bloody serum oozed from it. Periosteum was inflamed; split it open and packed it and saturated it with hydrogen peroxide. From five until nine I watched him very closely. I could not see any change unless the muscles were becoming more rigid. From ten to one, the temperature had dropped one and a half degree. The pain subsided and he could open his mouth. At three o'clock in the morning a profuse perspiration covered his entire body and he sank into a deep sleep. At four o'clock it was normal. His finger felt a great deal better and I removed the dressing, and he went back to sleep and had no further trouble with it. Gave patient 20 cc. anti-tetanic serum, and wound was saturated with dioxygen for four days.

*Dr. C. A. Pease, closing discussion:* The only thing I wish to say is, the treatment of these cases is preventive treatment. It would be a good thing if all 4th of July injuries were reported at once. I can not too strongly urge the danger in not opening the wound as early as you see it. Carbolic acid is one of the worst things you can use. Use bichloride, or better still, peroxide of hydrogen injected directly into the muscle, just around the seat of injury. If the case has advanced, use large quantities, as much as 700 or 800 c. c.

#### CHRONIC DIPHTHERIA.

Grunwald directs attention to certain cases classed by Behring as diphtheroid and that differ very materially from the usual diphtheria and cause much difficulty in diagnosis. The following is a case in point: Male, 49; in March, 1905, an attack of what seemed to be influenza, accompanied by profuse purulent discharge from the nose, that disappeared spontaneously but left a marked throat trouble. Two physicians diagnosed the latter as syphilitic and applied caustics and ordered mercury. Patient grew worse and lost weight 27 pounds. Seen first by Grunwald July 6, 1905, four months after beginning of attack. General examination negative, tonsils and uvula very red, denuded of epithelium, partially covered by a dirty white membrane that was easily removed without bleeding and was microscopically composed of leucocytes and fibrin. A few small glands palpable in sub-maxillary region. Repeated microscopic examinations revealed the presence of bacilli resembling the Loeffler bacillus, and bacteriologic examination demonstrated characteristic diphtheria bacilli with strepto and staphylococci. Four injections of diphtheria antitoxin with slight but not marked benefit. Dusting with methylene blue was followed by marked improvement, and bacteriologic examination on August 17 failed to show diphtheria bacilli; September 15, health seemingly fully restored. It seems clear that the angina was caused by the diphtheria bacilli. Six similar cases have been reported. The chronicity seemed to be due to: 1. Neglect of antitoxin therapy. 2. Locally caustics and generally mercurial treatment. [Denver Med. Times.]



## Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the Medical Sciences.*

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### EDITORIAL.

The recent investigation of the officers of the Cattle Commission brings to the attention of every one, the question of the danger to human beings in the ingestion of products from tubercular cattle. In reference to milk, this question has been pretty definitely settled—tubercular infected milk will produce human tuberculosis, and often the pulmonary form of the disease. The danger from infected meat is not so clearly established. The muscular tissues are rarely the seat of tubercular lesions and this product is almost always subjected to cooking. On the other hand any one familiar with the course of this disease knows that infection is largely carried through the blood and lymph streams and that no one can predict at what time these streams may be infected. There is always the possibility of a local tubercular process invading a blood or lymph channel resulting in a general miliary tuberculosis.

An infected blood or lymph means that any tissue through which these fluids course, may be temporarily or permanently infected. Then again we all know that beef is subjected to less cooking than almost any other meat. The temperature to which it is raised in the center of a roast or a rare steak would not be fatal to the tubercle bacilli. We see an analogy of this in the proven possibility of the trichina spiralis surviving the cooking process in pork. A temperature which would fail to kill these parasites would not prove fatal to the tubercle bacilli. In view of these facts it must be admitted that there is a chance, perhaps small, of infection from eating tubercular meat. Unquestionably the people are right in demanding that while the State is spending thousands of dollars to eradicate tuberculosis from the cattle of Vermont, they be protected from the danger, however small, from eating infected meat. They certainly have a right to protest against paying the price of the best healthy meat for the diseased material.

The introduction in the legislature of two bills to restrict and regulate the sale of narcotic drugs shows that the prevalence of drug addiction is awakening general interest and alarm. The facts as they are known are startling and it goes without saying that a true knowledge of the extent of the evil is impossible, for one of the predominant traits of the *habitué* is secretiveness. From this very fact the evil is much more difficult of regulation than the liquor habit. Admitting the fact of which we think there can be no question, that there is a crying need of some reform, we doubt the efficiency of any legislative enactment to restrict the sale. In the first place, the *habitué* will get the drug which he desires when allowed his liberty. Of this there can be no doubt. No sane and normal man can compete in sharp-

ness with one of these individuals. Then the habit is almost never acquired voluntarily, but almost always through the administration by the physician or concealed in some patent preparation. The former accident cannot be prevented, unless we forbid the use of these drugs by physicians, and the various label laws requiring the statement of the constituents of patent medicines to be printed on the label will do all that can be done towards preventing the latter occurrence. So by failing to restrict the confirmed addict and by having no influence on the acquirement of the habit, the law becomes a dead letter, and the fewer of such enactments on our statute books, the better.

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### NEWS AND PERSONAL ITEMS.

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*We desire to make this column of personal interest to all. Physicians are requested to send news items.*

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#### VERMONT.

Dr. W. R. Harkness has reopened his office at Montpelier.

Dr. C. F. Whitney, until recently of Norwich, Conn., has taken the office and practice of the late Dr. F. H. Dunbar at Swanton.

Dr. H. S. Herrick who graduated in 1905 from the University of Vermont College of Medicine, has opened an office in St. Albans.

Dr. Marian L. Bugbee has removed from White River Junction to become physician in charge at the Memorial Hospital at Concord, N. H.

Dr. E. A. Tobin of the class of 1905, University of Vermont College of Medicine, was married Oct. 16th to Miss Anna Daniels of Middlebury. Dr. Tobin is practicing in Bristol.

Letters have been received from Dr. H. B. Hanson, formerly of Hinesburgh, who left for the Orient recently. Dr. Hanson is now located in Feshn, Egypt, where he is a medical attendant to the workmen on a large plantation.

Dr. A. J. Valteau and Miss Gertrude Fife were united in marriage Oct. 31 at the home of the bride's parents. Dr. and Mrs. Valteau left at once for Montreal, whence they took passage to Glasgow, Scotland. They will remain abroad several months, spending most of the time in Germany, where the doctor will take special study on the eye and throat.

The first biennial report of the Vermont board of medical registration has been made public. The board reports that it has issued 82 certificates to recent medical graduates and that ten physicians have been admitted to practice in the State by the endorsement of the certificates of other States with which the board has entered into reciprocal relations. The financial statement shows that fees received from applicants for certificates amount to \$4,270 and the expenditures by the board have been \$2,525.86, leaving a balance of \$1,744.14.

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#### NEW HAMPSHIRE.

Dr. F. A. Sprague, a recent graduate from Baltimore, has opened an office at Concord.

The Morrision Hospital at Whitefield celebrated its fourth year of existence recently by the graduation of two nurses from its training school. Interesting exercises were held in connection with the event.

Dr. T. S. Foster, 78 years of age, one of the oldest physicians of Laconia, died at the home of his son, Oct. 24. Dr. Foster was born in Richmond, Me., in 1828, was educated in the public schools of that town and graduated from Bowdoin College in 1862. He immediately joined the surgeons' corps of the United States army, in which he served in the Civil War. He went to Laconia in 1865, where he had since had a large practice up to two years ago, when he retired from active work.

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#### MASSACHUSETTS.

Dr. Robert F. Davis of Fall River died October 29, being 84 years of age. He was a graduate of Harvard Medical School in 1847 and for many years practiced in Fall River. He was probably the first American physician to adopt artificial nutritive injections in acute stomach troubles. He was also the first in



Massachusetts to study caisson disease, encountered during the construction of Slade's ferry bridge in 1872. Dr. Davis was prominent in politics, having been mayor of Fall River and a member of three Congresses. He was also heavily interested in several woolen mills.

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#### NEW YORK.

Dr. Theodore I. Townsend of Utica has been appointed first assistant physician at the Dannemora State Hospital.

At the annual meeting of the Northern N. Y. Medical Association last month about 20 physicians were present and a very interesting session was held. Doctors Lockhart and Garrow of Montreal were unable to be present on account of the death of Dr. Stewart, of that city. Dr. Silver of Plattsburgh, whose name appeared on the programme, was also absent, but there were interesting papers by Drs. Hamilton of Montreal, McClellan of Saranac Lake, Tremblay of Saranac Lake, Hackett of Champlain, Dalphin and Grant of Malone. A banquet was held at the Smith House. Five new members were admitted. Officers for the ensuing year were elected as follows: Dr. Smith of Winthrop, president; Dr. Dalphin of Malone, vice-president; Dr. Oliver of Malone, treasurer, and Dr. Wilding of Malone, secretary. Committee of arrangements for 1907, Drs. Wilding, Oliver and Furness of Malone. Dr. Furness was appointed chairman of a committee to confer with Dr. G. C. Madill of Ogdensburg, president of the District Medical Society, with a view to consolidating the two societies.

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#### BOOK REVIEWS.

**RHYTHMOTHERAPY**, a discussion of the physiologic basis and therapeutic potency of mechano-vital vibration. By Samuel S. Wallian, President American Medico-Pharmaceutical League, etc.

A text-book on Vibration treatment, with the addition of a dictionary of diseases with suggestions as to the technic of vibratory therapeutics. With the increasing use of the vibrator, this little book should find its place and prove useful to those who employ this method.

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**INTERNATIONAL CLINICS**, Volume III, 16th Series. A quarterly of illustrated clinical lectures and especially prepared articles. Edited by A. O. J.

Kelly, A. M., M. D. J. B. Lippincott Co., Philadelphia.

This is an especially practical volume, one which might well be read with profit from cover to cover. Of special interest are the articles on Treatment of Certain Forms of Bronchitis, by Joseph M. Patton; Treatment of Dilatation of the Heart, by W. H. Katzenbach; The Irregular Heart, Its Cause and Treatment, by Bertram Abrahams; The Clinical Significance of Peritoneal Adhesions, by Charles Greene Cumston; and The Pelvis of Lame Women, by A. Pinard. These represent only a portion of the good things in the book.

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**MODERN CLINICAL MEDICINE.**—Diseases of the Digestive System.

The recent advances in the physiological chemistry have placed the treatment of diseases of the digestive system on a scientific basis, and now works on the subject can be written from a rational standpoint.

This volume is an addition of value to these works.

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**TEXT-BOOK OF HUMAN PHYSIOLOGY.** By Robert Tigerstedt, Professor of Physiology in the University of Helsingborg, Finland. This is a translation of Tigerstedt's Physiology by J. R. Murlin, Ph. D., Instructor of Physiology, Bellevue Medical College, New York City. There is an introduction by Graham Lusk, Ph. D., Professor of Physiology, Bellevue Medical College. Price in cloth, \$4.00.

This work has some distinct points of originality. In the first place, it assumes a knowledge of histology and histological chemistry and devotes much less space to the consideration of these subjects. Commencing with the consideration of the physiology of the cell, the author builds up his subject in a logical manner reaching the climax in the chapter on the physiology of the nervous system. The illustrations, of which there are 305, are good. The translation of this book is decidedly a valuable acquisition to the works on physiology.

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#### RUTLAND COUNTY.

A quarterly meeting of the Rutland County Medical and Surgical Society was held at Rutland, Oct. 16, with 18 physicians in attendance. Diseases of the urinary system were considered. There were discussions by Drs. W. W. Townsend, E. M. Pond, R. Halford Miner and C. W. Strobell of Rutland, George D. Parkhurst and C. E. Griffin of Barre, G. G. Marshall of Wallingford and W. N. Bryant of Ludlow.

## AN EPITOME OF CURRENT MEDICAL LITERATURE.

### MEDICINE.

#### TREATMENT OF CHRONIC CONSTIPATION.

RICHARDSON (*Medical Mirror*, Oct., 1906), writing upon the treatment of chronic constipation, concludes as follows: In women who have borne children, and who give the history of having previously been regular, small doses of thyroid will sometimes give regularity. The reason for this is not very evident, but I was led to try it from attending a five-year-old cretinic child whose bowels never moved without an enema. After the administration of the thyroid, one of the first symptoms of improvement was the regularity of the bowels. Arguing that as pregnancy often affects the thyroid secretion, and that the constipation was apparently the result of the pregnancy, and no other cause being evident, I prescribed thyroid with very satisfactory results, the patient being able to do without the drug after a few weeks of treatment. These cases are no doubt exceptional.

In considering the physiology of the evacuation of the bowels, it occurred to me that possibly a diminished quantity of bile might be a cause of chronic constipation, and in any case an extra quantity of bile might act as a sufficient stimulant to keep the bowels regular. I therefore prescribed five grains of glycocholate of soda mass t. i. d., ordering the patient to take it regularly, using a purgative when necessary. After taking the capsules for a week, the patient reported that her bowels were moving regularly without purgatives. I have had the same gratifying results in several other cases, and, further, the bowels remain regular after the discontinuance of the drug. Should a tendency to constipation return, a few capsules will restore regularity.

One advantage in the use of sodium glycocholate mass is that it is not toxic and is the natural evacuant of the bowels. The vegetable purgatives, calomel, etc., act through their toxicity, and though the neutral salts are non-toxic, they deplete the system. Sodium glycocholate mass is not a purgative, and results can only be expected after two or three weeks' trial.

Occasionally the patient on commencing the treatment complains of nausea; this usually disappears after a day or two if the medicine is persevered with, and can be avoided by taking the capsules two hours after meals, when the stomach is emptying itself rapidly. Sodium glycocholate mass is also a great benefit in malaria and in other diseases where the liver has become torpid and the complexion of a dirty, icteroid hue. On the administration of the drug for a few weeks the skin clears up, the liver regaining its normal activity.

In hepatic colic, sodium glycocholate mass is a specific, and, further, by long-continued administration, it will dissolve gall-stones in situ, rendering surgical interference unnecessary.

#### POLYCYTHEMIA VERA.

WATSON (*Birmingham Med. Review*, January, 1906). The special clinical signs of such cases are: (1) Chronic cyanosis, well shown in the face, especially over the malar prominences, nose, lips and ears. It can also be seen in some upon the upper part of the chest, and in the hands and feet. (2) Enlargement of the spleen. This is in most cases well marked, extending beyond the costal margin, and easily felt. (3) The condition of the blood and circulatory system. The blood has a very dark purple,

almost black color, flows sluggishly from a prick or slight cut, and Osler notes particularly the length of time which it takes to spread under a cover-slip. The coagulation time is markedly shortened, two minutes in one case. The great and outstanding feature, however, is the tremendous polycythemia; this is persistent, and dependent upon an increased production of erythrocytes, and with an attendant general plethora. The red cells in a case observed by the author reached 11,150,000 per cubic millimeter. The red cells vary abnormally in size, shape, and staining capacity, and there is an increase in nucleated reds. The hemoglobin values are greatly raised, attaining a percentage varying from 120 to 170. The total volume of the blood is increased, sometimes to double the normal amount. The specific gravity is also increased, as is also the viscosity. Finally, there has been observed a diminution of the white cells, with a high percentage of polymorphonuclear cells. The pulse is full, and of high tension. In some cases there is hypertrophy of the heart, but no valvular disease has been observed. (4) Albuminuria is constantly present, with an increase of urinary pigments. (5) There is progressive asthenia of gradual onset, starting with perhaps slight weakness in the legs, and the grasp is feeble. Movements are slow, and there is a general disinclination for any kind of exertion. This general muscular weakness is very characteristic of the later stages. (6) Nervous and mental symptoms consist of headaches with dizziness and vertigo. Later, there is mental torpor and impaired memory. Speech is indistinct, slow and difficult. In most cases the disease is chronic, and the symptoms have lasted for years. Post-mortem evidence distinctly points to and confirms the idea that it is a disease of the bone marrow, which takes upon itself extraordinary powers of producing red cells. But the exact cause of this renewed and vigorous activity of the shaft marrow remains unknown. The diagnosis must be made from congenital heart disease, myocarditis, adhesive pericarditis, emphysema, and other diseases of the lung and heart that might produce cyanosis. The continued use of coal-tar preparations, such as acetanilide, antipyrin, etc., may give rise to marked cyanosis, in some cases with enlargement of the spleen. Ribbert considers there is a form of myeloma, the tumor cells being related to erythroblasts, and these proliferating rapidly enter the blood. Another theory assumes that some toxin of a hemolytic nature is manufactured in the alimentary canal or enlarged spleen, and is absorbed into the circulating blood in minute quantities, not sufficient to cause much hemolysis, but enough to excite reaction in the hemopoietic tissues.

#### TREATMENT OF TUBERCULOSIS WITH "TUBERCULOL."

HERMANN FREY (*Wien. klin. Rundschau*, 1906), writes: In the treatment of tuberculosis he states that he has had very good results with "tuberculol," a preparation made directly from tubercle bacilli. The tuberculol is preserved with phenol, and forms a clear aqueous liquid of such strength that 1 cc. will kill a healthy guinea-pig weighing 250 gm. The necessary amount to kill a guinea-pig of 250 gm. is termed 1 d. l. (dosis letalis), and this amount, together with other dilutions in the decimal system (0.1 d. l.; 0.01 d. l., etc.), are put up in sealed vials. The initial dose must be very small (1-10,000 to 5-10,000 d. l.). The injections are continued every day until a slight reaction follows. After eight to ten injections, the strength of the solution has generally been increased ten times. The susceptibility varies considerably, and is by no means absolutely proportional



to the severity of the process in the lungs. A local reaction without general symptoms, such as fever, is a very favorable sign, as such cases are frequently cured. As soon as a reaction is seen, the last dose is repeated, but if no tolerance is established after a second repetition, a solution ten times weaker is employed. With the appearance of a reaction, the injections are no longer given every day, but after intermissions varying from one to two to eight days.

Tuberculin is not only much stronger than most tuberculin preparations, but, if given carefully, will rarely disappoint. It possesses the advantage of being uniform in strength, and very concentrated, so that only small amounts of fluid need be injected. The treatment results in the formation of an area of hyperemia and serous transudation about the foci, and in the production of anti-bodies in the system. Great care should be exercised in injecting cases already far advanced in the disease. Intercurrent febrile conditions must be regarded as a contraindication. Occasionally the sputum becomes slightly bloody during the treatment, but this need not alarm. The dose should here be increased more carefully. Even with mixed injections with streptococci, good results were frequently observed.—*The Post Graduate*.

#### SPRAY OF RESORCIN IN COMMON COLDS.

A. G. WELSFORD (*Brit. Med. Jour.*) is of opinion that the obvious line of treatment of common colds in the head is to spray the nasal passages with an effective antiseptic, and the difficulty has been to find one which is not only efficient, but is also sedative to the mucous membrane. He finds such an antiseptic in resorcin, having used it upon himself for a considerable time, and also prescribed it freely with results most favorable. In his own case it relieved a most troublesome hypertrophic rhinitis, with which he had been troubled for years, and the nasal catarrhs which used to attack him with unfailing regularity whenever he had the misfortune to approach any one afflicted with a cold have been conspicuous by their absence. Similarly good results have been reported to him by patients, and the drug appears worthy of a more extended trial. The best mode of employing resorcin is as a spray. A watery solution of about 5 grn. or more to the ounce is used, combined with a little alkali. Tablets for nasal irrigation are made by the leading pharmaceutical firms, which contain bicarbonate of sodium and common salt, together with menthol, or thymol and oil of wintergreen. One of these tablets should be crushed and added to the resorcin solution to the strength required. The solution should be sprayed up the nasal passages freely regularly as a morning and evening duty, and the spray should be used very freely whenever a cold threatens.

#### TULASE—A NEW REMEDY FOR TUBERCULOSIS.

A new remedy has been proposed by Professor Von Behring for the treatment of tuberculosis. It consists of a toxin derived from the tubercle bacillus and named tulase. A brief account of Professor Behring's discovery is given in a recent number of *The Hospital*, to which we are indebted for the account herein given. Tulase is a clear liquid substance prepared by treating tubercle bacilli with chloral. It contains the body substance (somatic) of Koch's bacillus, administered either intravenously, subcutaneously, or per stomach. It modifies the tuberculin, the latter being absorbed by the body cells and transformed into the hypothetical substance T X. "This substance produces immunity to tubercle bacillus and a hypersensitiveness to Koch's tuberculin.

In sound persons tulase produces immunity in four months. The T C becomes T X more rapidly in persons already affected with tubercle, and hence the curative effect of tulase. Its efficiency has been demonstrated on sheep with localized tubercular affections in the eye, on the skin, and in the lungs. The best results were obtained when the tulase was administered by the stomach in the form of an immunizing milk." It is said that Professor Behring refuses to furnish this remedy to private practitioners until exact doses and the best methods of treatment have been more fully ascertained. One of the essential conditions on which hospital clinics will be supplied with the material being that the physician in charge shall receive a special course of instruction in Von Behring's laboratories at Marburg. Three methods of immunization are pointed out by Professor Behring in his preliminary announcement: Jennerization, a word derived from the discoverer of vaccination; Mithridatism, a term adopted from Mithridates, who took poisons so as to become immunized against them; serum therapy. In the latter process the serum acts without cellular agency, the cells remaining passive. "Antibacterial bodies develop in the blood of infected persons who get well spontaneously, as in the case, say, of diphtheria or scarlet fever. These bodies may either be the curative agents or they may be the agents which produce future immunization. This affords an explanation of how one attack of infectious disease prevents a person from ever afterwards being again attacked by the same disease. In the case of diphtheria Behring did not find these antibacillary forces either in the blood or blood serum, but he discovered a disinfecting mechanism resembling what occurs when iodoform is applied to wounds. The disinfectant and antiseptic efficacy of iodoform do not rest on its antibacterial, but on its antitoxic effect, and pus and infected exudates are made inoffensive by contact with iodoform, provided the iodoform becomes dissociated under the influence of bacterial products. The soluble diphtheria toxin discovered by Roux is rendered harmless by the serum of mithridized animals. Therefore, the action of mithridization and of serum-therapeutic immunization is accomplished by antitoxic antibodies. The process of active immunization is longer and more dangerous than the passive. Consequently the serum-therapeutic method of obtaining immunity against infectious diseases is the one to be preferred whenever it can be obtained, as, for instance, in the case of the treatment of diphtheria by the anti-diphtheria serum." Dr. Behring is hopeful that his research may lead to practical results in the treatment of tuberculosis. He is inclined to believe that active immunization is a preferable method, combined, perhaps, with the serum treatment, carried out according to methods evolved during his study of this subject, but which are not fully explained in his announcement.

#### THE BLOOD PRESSURE IN PARESIS.

G. L. WALTON, Boston (*Journal A. M. A.*, October 27), in order to test the correctness of the general belief that the blood pressure in paresis is low, has examined 108 male patients with this disease in the Massachusetts hospitals for the insane, with special reference to this point. He used the Riva-Rocci instrument and employed the ordinary precautions in making the observations. The average of all the observations indicated a high rather than a low pressure, but to eliminate the influence of renal and arterial conditions, he separately tabulates the results in 44 cases, without record of renal, cardiac or arterial disease, which shows a tendency to hypotension

rather than to hypertension. The difference in this respect is not considered of very great value for diagnosis, the less so since variability rather than high pressure is the characteristic of the psychoneurotic. The author gives his conclusions as follows: 1. The average blood pressure in paresis, taken as a whole, is high. 2. This is doubtless due to the prevalence of atheroma with its cardiac and renal accompaniments. 3. The average blood pressure in cases of paresis without atheroma, cardiac enlargement or renal disorder, is probably somewhat lower than that of health, but the variations are so great that it can not be said to be uniformly low. 4. The test is not likely to prove of great practical value in the differentiation of paresis from other nervous disorders, though here, as elsewhere, it is of great value in estimating the circulatory condition of the individual. 5. These observations are too few to establish a rule with regard to the blood pressure in varying emotional states. So far as they go, however, they tend to show that: (a) The excited states of paresis are as likely to be accompanied by high as by low pressure; (b) mental depression is accompanied by high oftener than low pressure, but that it is not incompatible with low pressure; (c) while the average pressure in euphoria is perhaps somewhat lower than in the other mental states of the general paralytic, it is not inconsistent with high pressure or with pronounced atheroma with its cardiac and renal accompaniments.

#### CHOREA.

From a study and analysis of one hundred and eight cases of chorea treated at the Johns Hopkins Hospital and Dispensary, W. S. THAYER, Baltimore, (*Journal A. M. A.*, October 27), concludes that there is good reason to think that well-marked febrile symptoms, without rheumatism, occurring in chorea, especially if they are accompanied with undue rapidity or irregularity of the pulse, is at least strongly suggestive evidence of acute endocarditis. It is possible that the fever may be the sign of a deeper lying infection back of the chorea, but there is nothing in his study to settle the question whether chorea represents a secondary infection or a special localization of an infectious agent responsible for essential manifestations of the disease. The study of the circulatory conditions in old patients still remains to be carried out, but Thayer calls attention to the following points of interest thus far developed in his investigation: 1. Of 689 cases of chorea observed at the Johns Hopkins Hospital and Dispensary during one or more attacks, 25.4 per cent. showed evidences of cardiac involvement; such evidence was present in over 50 per cent. of the patients studied in the wards of the hospital. 2. Cardiac involvement occurred with somewhat greater frequency in those cases in which there was a history of acute polyarthritis than where such history was absent. 3. Cardiac involvement was commoner in cases of chorea with frequent recurrences than in those in which there was a history of a single attack. 4. In 110 cases of chorea treated in the wards of the hospital there was fever of a moderate extent in almost every instance. 5. In the large majority of the cases in which high fever was present there was evidence of cardiac involvement. 6. There is good reason to believe that the presence of fever in otherwise uncomplicated chorea is, in a large proportion of cases, associated with a complicating endocarditis.

#### THE OPEN-AIR TREATMENT OF PNEUMONIA.

W. P. NORTHRUP, New York City (*Journal A. M. A.*), for over eleven years has been using free ventilation

and fresh air treatment in pneumonia, and during the last year he has followed the practice of putting his patients in the New York Presbyterian Hospital for six hours a day out on the roof in all weather in which harsh high winds, rain and snow did not prevent. He gives histories of two cases, both serious, and in one of which he thinks the patient could not have recovered under other treatment. The hospital authorities are so well satisfied of the value of this method that they are making a colossal roof garden on the medical side of the hospital to be an open-air ward for these cases. The patients most favorably affected by open-air treatment are those with severe poisoning, with delirium, partial cynosis or deep stupor. In Northrop's experience all patients do better in cool fresh air, which can be secured in private practice by screening off a portion of a room by an open window. None have been harmed, in his observation, and some have been greatly benefited and possibly saved by the cold fresh-air treatment. If pneumonia, due to an infecting agent, is thus benefited, the value of the treatment for other infectious diseases is suggested, and, in fact, he has tried it in many others, including typhoid fever with severe bronchitis, whooping cough with bronchitis and convulsions, with excellent results. He considers it, in fact, the ideal treatment for septic fevers. The only regulation is to keep the patient comfortable and especially to keep the feet warm.

#### TUBERCULOSIS OF THE MIDDLE EAR AND MASTOID.

E. A. CROCKETT, Boston (*Journal A. M. A.*, October 20), thinks that the routine examination for the tubercle bacillus would reveal a large number of infections which have clinically shown no diagnostic symptoms. They constitute, he says, the majority of the severe mastoid cases seen in infants. In the extreme cases the diagnosis can be certainly made without recourse to cultures by unmistakable clinical signs, and first and most important of these, he reckons the appearance of a small glandular swelling in front of the tragus, either before or coincident with a middle-ear discharge. Later there is parotid and subzygomatic induration with or without local abscess formation and in extreme cases, after weeks or months, the formation of postaural abscesses and induration of the glands of the neck. In the severe type the process is apt to begin in the middle ear or temporal bone and to be attended by a facial paralysis on the affected side, and later by the formation of large sequestra of the mastoid or petrous or both. These cases are easily diagnosed and their prognosis is absolutely bad if untreated. A more common form is an infection of the middle ear without involvement of other tissues or of the mastoid, evidently proceeding by way of the Eustachian tube and usually a complication of pulmonary tuberculosis. In Crockett's experience, it has been impossible to check one of these cases short of complete destruction of the membrane and partial destruction of the malleus and incus. Typical cases of this and of the severer type are reported. In the latter, prompt operative treatment checks the local process, and the prognosis is good; otherwise, as already stated, it is bad. Crockett says, indeed, that the tuberculous process in the neighborhood of the ear is fully as favorable in infants, if not more so, as that of the ordinary septic processes commonly causing mastoid diseases in children. Of course, general hygienic and open-air treatment is also indicated, and much good can be obtained in the middle-ear processes by the use of iodoform powder and gauze in all the open wounds. These are the only cases in which, in his experience, marked improvement follows the use of iodoform gauze instead of plain gauze.



## SOCIETY MATTERS.

### MINUTES OF NINETY-THIRD ANNUAL MEETING OF THE VERMONT STATE MEDICAL SOCIETY, HELD IN BARRE, OCTOBER 11th AND 12th, 1906.

*First Day, Thursday, Oct. 11.*

The members of the Society met in the Drill Room of Masonic Hall at 10:45 A. M., the president, M. L. Chandler, in the chair, twenty-five members being present.

Prayer was offered by Rev. F. A. Poole of Barre.

#### PRAYER BY THE CHAPLAIN.

Almighty God:—We acknowledge thee and seek thy favor. In these latter days so many forces are ministering to our welfare that we feel constrained to give thee thanks. We thank thee for man's humanity to man, for all of human effort and self-denial that are contributing to human good. Especially do we thank thee for the medical profession with its ministries to the human body. We glory in its progress from the earliest days till now. We bless thee for its present knowledge and efficiency and continued zeal for progress. We are grateful for the comfort its members afford the sick and suffering, who rely upon them with such confiding trust. To parents anxious for their children; to friends concerned for the recovery of friends, how welcome is the physician's presence! How full of solace and of hope! We are mindful too, and grateful for it, of the moral standing of this profession, how integrity and benevolence have been its marks in all the generations. Nor would we forget its rare unselfishness as it has sought to make conditions sanitary, in all ways possible to prevent disease, and thus to reduce the demand for its services. Surely, we ask thy blessing on this society; on this gathering, and all who have gathered. Wilt thou honor these meetings with thy presence. May it be a season of pleasure and profit and rare good fellowship. And may the welcome of this city be so hearty, so genuine and cordial as to show the respect we cherish here for the minister to physical well-being as he goes about doing good.

May thy favor attend this noble science, this noble profession, in the future as in the past.

We ask it in the name of him who was the Great Physician,—Jesus Christ, our Lord. Amen.

The records of the last annual meeting were read by the secretary, and on motion they were accepted.

J. W. Jackson, as chairman of the Committee of Arrangements then made his report as follows:

#### REPORT OF COMMITTEE ON ARRANGEMENTS.

There are one or two things I wish to call your attention to. If you find on first trial that your room is not quite as pleasant as you wish, don't hesitate to make a change. We have plenty of places for you all and we hope you will all get pleasant rooms.

The banquet has been changed from after the evening session to before the evening session. It will make it a little more pleasant to have the banquet earlier, followed by the reception for the ladies, and the members will join the ladies after the evening session at this reception.

The exhibits are on the floor below and I ask your consideration of them. The number of exhibitors this year is unusually small. The firms say "It doesn't pay." Out of a list of sixty-two houses which I in-

vited, I think only fourteen are represented, and some did not even reply to my invitation. Now it is up to us to make it pay and if any of you ever come to make arrangements for a meeting of this kind, you will find that the exhibitors are very desirable.

I will call your attention to the Moxie people who have not only paid \$10.00 for the space to place their goods, but have supplied their goods which are to be used gratis during this meeting.

This block is the headquarters for everything except for lodging and eating. The House of Delegates will find their room in the rear of this room. The Vincitia Club rooms on the floor below are to be the headquarters for the ladies and I hope they will make themselves at home there.

We will be glad to have carriages at the door waiting to take you to your rooms whenever you are ready to go.

I hope you won't feel as though you had to hurry from the city tomorrow. We have chartered a train and have provided a trip to the granite quarries. If you can possibly give up the time to this trip, you will never regret it. We ask you all to stay and make up a party if you think you will be interested at all in the quarries. The train will leave at one or earlier if you can get ready and will be back at three or four, giving plenty of time to take the trains going out from here in the afternoon. I will have some time tables put up so you can look up the hour your train leaves.

George H. Gorham presented his report as secretary which was accepted and adopted.

#### SECRETARY'S REPORT.

*Mr. President and members of the Vermont State Medical Society:*

Your secretary is happy to report one of the most successful years since the reorganization of the society. Forty new members have united with the society the past year and one county not yet reported. Our total enrollment today is 429, a net gain over last year of 13. There are still about one hundred regular practitioners in the state who are not members of our society. Strong, earnest effort should be exerted to have these men join the society.

I would call your attention to the positive need of increasing the annual dues. For many years previous to the reorganization of the society the dues were \$3.00, but since that time, four years ago, they have been only one dollar. That is not sufficient for the proper maintenance of the society. At the time of the reorganization we had about \$600.00 in the treasury; last year we had less than \$60.00. I have been unable to procure certificates of membership to send to the new members for the past three years on account of the financial condition of the treasury. I would recommend that the dues be increased to \$2.00 per annum.

It would be well for the House of Delegates to take action in regard to the repeal of parts of certain articles in our Constitution and By-Laws that refer to the Board of Censors. By the Medical Registration Law passed in 1904 they have become null and void.

The arrangement made one year ago to have the Vermont Medical Monthly print the annual transactions has proved very satisfactory.

The members have not only received the regular transactions, including minutes, list of officers and members, addresses and papers presented at the annual meeting but a great many original articles, abstracts from all the leading medical journals, book reviews and personal items of interest to the profession.

A very large number of the state medical societies at present publish a monthly journal and a number of other states are contemplating making the change. Wisconsin makes the same arrangement as we do, paying the Wisconsin Medical Journal a stated sum per year to publish the transactions and send copies of the same to all the members.

I strongly advise the society to continue the arrangement.

Respectfully submitted,  
GEO. H. GORHAM, *Secretary.*

The treasurer, B. H. Stone, gave his annual report, which, on motion, was ordered to lie on the table:

I find that there is a little confusion with regard to the dues from the county societies owing to the fact that members are taken at any time into these organizations. Now, suppose a man enters a county society in September. Is he supposed to pay his whole year's fees to the State society for the single remaining month? It would simplify the accounts of the treasurer if the State Society would take over the new county society members at each annual meeting. I would also add that several members have been dropped during the year for non-payment of dues. I think there were ten or twelve dropped. As this report has not been audited, I would suggest that it be left to lie until the auditor arrives. I expect he will probably be here sometime today, and as soon as he comes I will have him audit it.

#### TREASURER'S REPORT FOR 1906-1906.

Vermont State Medical Society,  
In account with B. H. Stone, Treasurer.

##### CREDIT.

By balance in treasury Oct. 10th, 1905.....	\$ 59 37
By dues from county societies.....	394 00
	<hr/>
	\$453 57

##### DEBIT.

To cash paid for postage, etc.....	\$ 4 00
" " " Geo. H. Gorham, salary and exp...	84 32
" " " Burl. Print. & Bookbind'g Co....	4 75
" " " Truax & Co., printing.....	1 35
" " " Chas. E. Guild, printing.....	12 00
" " " Burl. Med. Pub. Co., printing and distributing Monthly .....	300 00
Balance in treasury.....	46 95
	<hr/>
	\$453 57

Audited and approved,

JOHN H. BLODGETT,  
October 11, 1906.

M. H. Eddy reported as chairman of the Committee on Necrology. He also gave an obituary of E. D. Ferguson of Troy, N. Y., an honorary member of the society:

#### REPORT OF COMMITTEE ON NECROLOGY.

I don't know as I have anything to report. I did not know I was expected to have a report until I received a notice from the Secretary. I looked up the matter and found the obituaries had all been provided for. I have written the obituary of one honorary member.

#### OBITUARY OF DR. E. D. FERGUSON.

Dr. Everard D. Ferguson was born in Moscow, Livingston County, N. Y., May 9, 1843. His grandfather was a soldier in the Revolutionary War. His father was Smith Ferguson, born in Orange County, N. Y., 1797. Dr. Ferguson received his education at Starkey Seminary in Yates County; Genesee College, the University of Michigan at Ann Arbor, and Belle-

vue Hospital Medical College, graduating in the study of medicine in 1868. He began the practice of his profession at Essex, N. Y., and in 1875 went to Dannemora, where he was surgeon of Clinton prison for three years. In 1878 Dr. Ferguson took up his residence in Troy, where he remained until his death.

The life of Dr. Ferguson is coexistent with the greatest strides in the history of the profession that he made his life work. His part of the work of advance in better methods of combatting disease was not small. He was a profound student, and his knowledge of surgery and practice of medicine, gained by many years of professional work, placed him in the front rank of his profession. He did not use the attainments he had gained by years of study for the benefit of the rich, to gain wealth and reputation, but among the poor in humble homes, his skill was often used to save life and give hope in dark hours of poverty and sorrow. He was charitable, and many a poor family will miss his kindness and his thoughtfulness and care for their health, as well as their material welfare. He was a broad-minded man as well as a physician of high rank, and he was ever interested in the welfare of his adopted city. He was one of the most prominent physicians of eastern and northern New York, whose reputation has spread even beyond the boundaries of his native state. He was a member of the New York State Medical Association, of which he was made secretary at the time of its organization. He held that office for many years, and was afterward president of the Association. He was also a prominent member and vice-president of the American Medical Association; and a member of the Rensselaer County Medical Society, and the Medical Association of Troy and Vicinity. He was a member of the Masonic fraternity, and a communicant at Holy Cross Church. In both church and Masonic circles he was deservedly popular.

There is one institution that owes more to Dr. Ferguson than to any other person, and that is the Samaritan Hospital. He may be termed the founder of the institution, for it was through his efforts that the hospital took its position among the best institutions of its kind in that section of the state. It was founded in 1898. Dr. Ferguson had ever labored faithfully to promote the welfare of the hospital, and has been since its foundation the chief of its medical staff and the chairman of its executive committee.

He spent the summer at his country place near Hudson, where he was seized with an acute intestinal trouble, Wednesday, Sept. 5th. He went to Troy Friday, Sept. 7th. The best of the medical talent in the city that could be secured, including Drs. James P. Marsh, Frank Smith, Wm. M. Hogeboom, and John B. Harvie, were summoned, and there was a determined fight to save their brother physician, but he sank steadily until the end came.

A rise in temperature preceding or during menstruation is claimed by Franck to be a strong presumptive sign of a morbid process somewhere in the body. It points often to tuberculosis, especially if the woman is anemic and thin, with a tendency to sweat and to catch cold readily. Measured in the rectum, a fraction of a degree above normal may be due to the hyperemia of some inflammatory affection in the adnexa; but if this can be excluded, then the assumption is in favor of tuberculosis.—*The Clinical Journal.*



# Vermont Medical Monthly.

VOL. XII.

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## ORIGINAL ARTICLES.

### MEDICINE IN SHAKESPEARE.\*

*By F. A. L. Lockhart, M. B., and C. M. Edin.,  
M. D., McGill; Professor of Gynecology,  
University of Vermont College of Medicine.*

#### GENTLEMEN:

My first duty this afternoon is the very pleasant one of thanking the authorities of the University of Vermont for asking me to accept the great honor of delivering the opening address of the Faculty of Medicine for the session of 1906-7.

You have just returned from a long holiday and to-day marks the commencement of a new period of hard study for you all. For the first-year men, perhaps it will be particularly trying as the work will be so utterly different from anything which they have before attempted, and in looking for a subject for this address, I was prompted by the above considerations to choose one which would not be too strictly medical, so as to let you down easily. I have therefore decided to tell you a little about medicine as it is considered in the works of the immortal Shakespeare. This essay is very imperfect but, will, I hope, stimulate some of you to study those works for yourselves and, at all events, I hope that it will entertain you for the short time during which I am to have the pleasure of addressing you.

William Shakespeare was born at Stratford upon Avon on the 23rd of April, 1564. His parents were quite humble people of that city, his father being engaged in the wool trade. After spending the greater part of his boyhood in his native place, he went to London, where he soon obtained a situation in one of the theatres, at first as an ordinary stage hand

but later as a recognized actor, in which role he achieved considerable success. While there he amassed quite a good fortune and returned to Stratford, where he died on the anniversary of his birthday, viz.: April 23rd, 1616.

Shakespeare was a man of most extraordinary powers of observation and description and it is difficult to believe that he had a very poor early education, but such is the case. Buchnill says that "the knowledge of the great dramatist, is, in every department, so extensive and exact, that it requires the skilled observation of professional minds to fully and fairly appreciate and set it forth." Apart from his medical knowledge, look at his forecast of the law of gravitation. This was not discovered by Newton until twenty-six years after the death of the poet and yet in *Troilus and Cressida*, Cressida says:

"But the strong base and building of my love  
Is as the very centre of the earth,  
Drawing all thing to it."

The immortal bard's knowledge of medicine as it was practiced up to his own day was very wide. It was gleaned in various ways. For one thing his own daughter married a doctor who was probably able to give him valuable advice concerning his profession and, again, his publishers probably placed at his disposal such books as had been issued.

In order to understand Shakespeare's allusions in many parts of his works, it must be remembered that he lived in a time of transition from the old theories to those which were founded upon a more solid and scientific basis.

His age contained some of the most prominent men who have ever striven to advance the science of medicine. Fallopius, after whom the Fallopian tubes were named, had only just died. Eustachius, who gave his name to the passages connecting the ear and throat, was still alive. Servitus described the vascular connection between the heart and lungs. Columbus, not the great Christopher to whom all here are indebted for the discovery of our magnificent continent, but of

\*Address at the opening of the 54th annual session of the University of Vermont College of Medicine.

Rome, explained the relationship of the pulse to the systole and diastole of the heart. Up until now, no course of lectures or teaching in clinical medicine had been given, but Montanus was starting that most useful method of imparting medical knowledge at Padua. The latter was a most important school of medicine, as it was there that Fabricius was teaching. It was he who not only discovered the valves in the veins but also invented the trephine and introduced the use of the tracheotomy, tube, both of which instruments are of such infinite value at the present day. He, Ambroise Pare and Guillemeau were the Treves, McBurney and MacEwan of the age, the art of surgery being naturally much more advanced than that of medicine on account of the numerous wars which were constantly being waged.

There were but three medical lectureships in Great Britain at the time, viz.: two at Oxford and one at Cambridge, so that you can easily understand that the requirements necessary to practice medicine were not very onerous. There was no State Board for the would-be healer of the sick to dread as is the case now. Anyone having knowledge and experience of herbs, roots or waters was allowed to practice. Just think what a perfect heaven it must have been for the travelling quack with his gaudily painted wagon, his brazen trumpet and his nostrums which cured while you waited and who would relieve the suffering public of anything from a toothache to a full pocketbook.

Instead of the up-to-date manufacturing chemist of our present day, the Shakespearean physician went to his wholesale grocer and bought his supply of poppies, liquorice root or "bark," from which he made up his own tinctures of opium, liquorice and quinine. In fact, the whole science of chemistry was in its infancy, so that even comparatively simple remedies were but imperfectly understood. Specifics for various diseases were such things as crabs' eyes, prepared pearls, calculous concretions, etc.; to say nothing of other disgusting concoctions which were poured down the throats of trusting humanity. Shakespeare was rather inclined to scoff at the medical profession of his day, although his ridicule arose more from superficial than deep causes as is proved by his allowing Dr. Hall to marry his daughter. In *Coriolanus*, Menenius says:

"A letter for me? It gives me an estate of seven years' health; in the which time I will make a lip at the physician; the most sovereign prescription in Galen is but empiricute, and, to this preservative, no better than a horse-drench." His idea of the habits of the surgeons of the day may be gleaned from the speech of Sir Toby Belch in *Twelfth Night*. He has just been wounded in a street brawl and, in seeking a doctor, exclaims to a citizen: "Sot, didst see Dick, surgeon, sot," to which the clown replied: "O he's drunk, Sir Toby, an hour ago, his ayes were set at eight i' the morning."

During the life of the poet, three principles were supposed to be in man, viz.: spirits, humours and solids. The "vital spirits" dwelt in the arteries and therefore they were found empty after death. This is mentioned in *Love's Labour Lost*, and I think that you will rather approve of the sentiment which resembles that of our own day which is expressed when we say that "all work and no play makes Jack a dull boy." Shakespeare states this in a more picturesque manner, however, as follows:

"Why, universal plodding prisons up  
The nimble spirits in the arteries;  
As motion and long-during action tires  
The sinewy vigour of the traveller."

—*Love's Labour Lost*, iv-3.

As the heat of the land in the tropics draws the cool breeze from the sea at night to fan and revive its surface, so the heat of the heart was thought to draw the cool air into the lungs for two reasons. First, the lungs were composed of inflammable material which required the cool air to prevent their consumption, and, secondly, in order to supply the "pneuma" or ether from which the vital spirits were extracted.

Four humours were supposed to control the body and each was on duty during certain hours. They were blood, which ruled from 3-9 A. M.; phlegm, from 9 A. M. to 3 P. M.; choler, from 3-9 P. M.; and melancholy, from 9 P. M.-3 A. M. Any interference with these hours produced serious results. These humours could cause disease and were to be influenced by drugs or charms. You will remember that, when she desires to avoid marrying the Count of Paris, the Friar gives Juliet a soporific with instructions as to how to use it. He says:



"Take thou this phial, being then in bed,  
And this distilled liquor drink thou off:  
When, presently, through all thy veins shall run  
A cold and drowsy humour."

Again, when sounding the praises of Othello, Desdemona says:

"Methinks the sun where he was born drew all such humours from him."

—Othello, iii-4.

And, again in *A Winter's Tale*, ii-3, one reads:—

I do come with words as medic'inal as true,  
Honest as ether; to purge him of that humour  
That presses him from sleep."

In *Much Ado About Nothing*, Don Pedro exclaims: "What, sigh for a toothache?" to which Leonato replies, "Where is but a humour or a worm."

The term humour, as applied to a disease, is also introduced in that example of Shakespearean vituperative where Prince Hal asks Falstaff, "Why dost thou converse with that trunk of humours, that bolting hutch of beastliness, that swoln parcel of dropsies, that huge bombard of sack, that stuffed cloak-bag of guts, that roasted Manningtree with a pudding in his belly, that reverend vice, that grey iniquity, that father ruffian, that vanity in years?"

Rheums and catarrhal fluxes were closely related to humours. In *A Winter's Tale*, Polixines, disguised, asks his son Florizel:

"Is not your father grown incapable  
Of reasonable affairs? is he not stupid  
With age and altering rheums?"

—*A Winter's Tale*, iv-3.

And in *Measure for Measure* iii-1 occurs the following paragraph:

"Do curse the gout, serpigo and rheums  
For ending thee no sooner."

Othello also speaks of being affected with a rheum, saying:

"I have a salt and sullen rheum offends me:  
Lend me thy handkerchief."

—Othello, iii-4.

The circulation of the blood was not fully understood until Shakespeare had written most, if not all, of his plays. Harvey published his work upon the circulation in 1628, which was twelve years after Shakespeare died but he had experimented upon the subject for some years prior to the appearance of his book and it is most likely that he had written, or at least spoken in public, about his theories during the life time of the great dramatist. He knew that the veins contained blood, which

flowed back and forth in them in a vacillating manner, and that the heart was connected in some way with the circulation. Brutus says to his wife:

"You are my true and honourable wife;  
As dear to me as are the ruddy drops  
Which visit my sad heart."

—Julius Cæsar, ii-1.

And again again where Shakespeare speaks of blood collecting in the heart at death in the phrase:

"Which with the heart there cools and ne'er returneth  
To blush and beautify the cheek again."

Coagulation of the blood is spoken of in *Hamlet*, where the Ghost tells his son that the "cursed hebanon":

"Holds such an enmity with blood of man  
That, swift as quicksilver, it courses through  
The natural gates and alleys of the body  
And, with a sudden vigour, it doth possess  
And curd, like eagre dropping into milk,  
The thin and wholesome blood."

—*Hamlet*, i-5.

The liver was held to be the great blood-forming organ of the body, and therefore, as bravery is marked by plenty of blood, it was white in cowards. That redoubtable warrior, Sir Toby Belch, speaking of Sir Andrew Aguecheek, says:

"For Andrew, if he were opened and you find  
So much blood in his liver as will clog the foot  
Of a flea, I'll eat the rest of the anatomy."

—*Twelfth Night*, iii-2

Bassanio, when deliberating on the caskets, the choice of which is to win or lose Portia, exclaims:

"How many cowards, whose hearts are all as false  
As stairs of sand, wear yet upon their chins  
The beards of Hercules and frowning Mars,  
Who, inward searched, have livers white as milk."

—*Merchant of Venice*, iii-2.

Again is the same idea brought out in *Macbeth* who tells one of his hesitating attendants to:

"Go prick thy face and over-red thy fear.  
Thou lily-livered boy."

—*Macbeth*, v-3.

Falstaff praises wine because it warms the blood and is so productive of courage. He says to the inn-keeper: "The second property of your sherris is—the warming of the blood; which, before cold and settled, left the liver white and pale, which is a badge of pusillanimity and cowardice; but the sherris warms it and makes it course from the inwards to the parts extreme." ii *Henry iv-iv-3*.

He also inform us that "If I had one thousand sons, the first human principle I would teach them, should be to forswear thin potations and addict themselves to sack."

Another evidence of the knowledge that the blood existed in the veins is seen in the following quotation:

"Or if that surly spirit melancholy  
Had baked thy blood and made it heavy, thick;  
(Which runs trickling up and down the veins  
Making that idiot, laughter, keep men's eyes,  
And strain their cheek to idle merriment,  
A passion hateful to my purposes").

—King John, iii-3.

and, secondly:

"And it cannot be  
That, whiles warm life plays in that infant's veins  
The misplaced John should entertain an hour,  
One minute, nay, one quiet breath, of rest."

—King John, iii-4.

In *Coriolanus*, Shakespeare shows that the relation of blood to digestion and nourishment was appreciated. Menenius, in reproving the citizens for rebelling against the Senate, compares the latter chamber to the stomach which receives the food and from it extracts the nourishment which it furnishes to the other organs of the body (representative of the citizens) which enables them to work.

"True is it my incorporate friends, quoth he,  
That I receive the general food at first,  
Which you do live upon; and fit it is;  
Because I am the store-house, and the shop  
Of the whole body; but if you do remember,  
I send it through the rivers of the blood,  
Even to the court, the heart, to the seat o' the brain,  
And through the cranks and offices of man,  
The strongest nerves, and small inferior veins,  
From me receive that natural competency  
Whereby they live: and though that all at once  
cannot

See what I deliver out to each:  
Yet can I make my audit up, that all  
From me do back receive the flour of all,  
And leave me but the brain."

This may not be such a minute and scientific description of the process of and necessity for gastric digestion as would satisfy a physiologist but it certainly is sufficiently explicit for all practical purposes.

He also appreciated the effect of a good dinner upon the temper. Menenius, in *Coriolanus*, expostulates with those who are complaining that Cominius was not gracious to them during an interview, and explains that:

"He was not taken well; he had not dined:  
The veins unfilled, our blood is cold, and then  
We pout upon the morning, are unapt  
To give or to forgive; but when we have stuff'd  
These pipes and these conveyances of our blood,  
With wine and feeding, we have suppler souls

Than in our priest-like fasts: therefore I'll watch him  
Till he be dieted to my request,  
And then I'll set upon him."

—*Coriolanus*, v-1.

The pulse is infrequently mentioned, yet Hamlet urges the regularity of his as an evidence of his sanity, exclaiming:

"My pulse, as yours, doth temporarily keep time  
And makes as healthy music."

—*Hamlet*, iii-4.

Dr. D. B. Richardson clearly explains the origin of Shakespeare's knowledge of anatomy. While the poet was writing his plays, an extensive and profusely illustrated work on anatomy by Hezekiah Crooke was being published by W. Jaggard, Shakespeare's printer. As the plates for this work were very remarkable for that period, Jaggard would be sure to show them to his intimates, among whom the poet would be numbered, and one may be sure that a man of his love of detail would give them more than a passing glance.

He mentions the pia mater three times in his plays; once as the structure from which the brain is formed and twice as the brain itself.

"This is a gift that I have, simple, simple; a foolish extravagant spirit, full of forms, figures, shapes, objects, ideas, apprehensions, motions, revolutions; these are begot in the ventricle of memory, nourished in the womb of pia mater, and delivered upon the mellowing of occasion."

—*Love's Labour Lost*, iv-2.

As the brain itself, the pia mater is mentioned in *Twelfth Night*, as

"A most weak pia matter."

—*Twelfth Night*, i-5.

and in *Troilus and Cressida*, ii-2.

"His pia matter is not worth the ninth part of a sparrow."

In all of Shakespeare's plays but eight people are mentioned as practising medicine.

1. Doctor Caius is spoken of in *The Merry Wives of Windsor*, as a quack, the phrase running "Master Caius, who calls himself Doctor of Physic."

2 and 3. Two doctors, one English and one French, in *Macbeth*.

4. Dr. Butts, in *Henry VIII*, shows the friendliness which existed between the King and his physician. This person was in reality Dr. Butte who was Court Physician to "The Merry Monarch."

5. Cornelius is the doctor mentioned in *Cymbeline*. When the Queen asked him to give her some poisonous drugs, he was sus-



picious of the purpose to which she wanted to put those drugs and so gave her medicines which were innocuous, and thus prevented her from committing actual murder. In this play, as also in *Romeo and Juliet*, the author takes full advantage of the license which is usually supposed to be a poet's prerogative, as he makes the Friar give Juliet and Cornelius the Queen a drug which produces such a close imitation of death that the would-be victim is placed in the vault, although no such drug was known at the time.

6. In *King Lear*, the mad King is placed by Cordelia under the care of a physician who restores him to his senses by giving him a soporific and then, as he wakes, his favorite daughter talks soothingly to him while soft music is heard close at hand, Shakespeare thus forecasting the "St. Cecilia Guild."

7. The apothecary, in *Romeo and Juliet*, is the next on the list. In portraying him so poor as to be compelled to sell Romeo the poison with which he destroys himself, Shakespeare again takes poet's license, as that class of practitioner was very powerful in his day and could command the largest fees.

8. The last is Helena, daughter of a famous physician of Marbon. In *All's Well That Ends Well*, she claims that she can cure the King of a fistula and couches her pretensions in most beautiful language, saying:

"The greatest Grace bringing grace  
Ere twice the horses of the sun shall bring  
His fiery torches his diurnal ring,  
Ere twice in murk and occidental damp  
Moist Hesperus hath quenched his sleepy lamp;  
Or four and twenty times the pilot's glass  
Hath told the sleepy minutes how they pass;  
What is infirm in your sound parts shall fly,  
Health shall live free and sickness freely die."

Helena was not the only lady doctor, whom Shakespeare introduces into his plays, as the following dialogue occurs in *All's Well That Ends Well*, ii-1.

Lafeu: "I have seen a medicine  
That's able to breathe life into a stone,  
Quicken a rock and make you dance canary  
With sprightly stir and motion, whose simple touch  
Is powerful to araise King Pepin, nay,  
To give great Charlemagne a pen in his hand  
And write to her a love line."  
King: "What her is this?"  
Lafeu: "Why, doctor She."

The diseases brought most frequently before the student of Shakespeare are ague, rheumatism, plague, pestilence, fevers, measles, "the sweat," and leprosy, but mention is made of many others.

Ague was apparently more severe then than it is at present and the mortality from it was large. Macbeth, when besieged, depends upon its ravages to clear the country of the enemy, exclaiming:

"Hang out our banners on the outward walls;  
The cry is still, 'they come.'  
Our castle's strength  
Will laugh a siege to scorn: here let them lie,  
Till famine and the ague eat them up."

—Macbeth, v-5.

Cassius, in *Julius Caesar*, describing a fever which the latter had suffered from in Spain, says:

"He had a fever when he was in Spain,  
And, when the fit was on him, I did mark  
How he did shake: 'tis true, this god did shake,  
His coward lips did from their colour fly;  
And that same eye, whose bend doth awe the world,  
Did lose his lustre: I did hear him groan:  
Ay, and that tongue of his, that bade the Romans  
Mark him and write his speeches in their books,  
'Alas!' it cried, 'give me some drink, Titinius';  
As a sick girl."

—Julius Caesar, i-2.

This attack was undoubtedly an attack of ague, of which Shakespeare speaks of two varieties, viz.: quotidian and tertian, as *Rosalind*, in *As You Like It*, says: "If I could meet that fancy-monger, I would give him some good counsel, for he seems to have the quotidian of love upon him," and *Dame Quickly*, in describing *Falstaff's* illness, uses the two in conjunction, as follows:

"As ever you came of woman, come in quickly to see Sir John: Ah, poor heart, he is so shaken of a burning quotidian tertian that it is most lamentable to behold. Sweet men, come to him."

—Henry V., ii-1.

The action of the hot sun drawing up miasms and unhealthy vapours from moist ground was known. *Hotspur* cries,

"No more, no more, worse than the sun in March,  
This praise doth nourish agues."

Henry V. iv-1.

Again, *Caliban*, in *The Tempest*, says of *Prospero*:

"All the infections that the sun sucks up  
From bogs, fens, flats, on Prosper fall and make  
him  
By inch-meal a disease."

—Tempest, ii-2.

Although plague was so prevalent in the time of Shakespeare, he only mentions the specific variety twice and on each occasion it is the same one.

In *Coriolanus*, it is stated that "now the red pestilence strike all trades in Rome and occupations perish." The other reference is

where Caliban again curses Prospero, exclaiming:

"The red-plague rid you  
For learning me your language."  
—*Tempest*, i-2.

This red-plague was, no doubt, typhus as this was very prevalent at the time, and was characterized by a red eruption.

The "sweat" was a form of disease which was described by Dr. Caius in 1552 and was of an epidemic nature. It affected those who were the slaves of eating and drinking chiefly and made itself evident by "pain in the back, or shoulders, pains in the extreme parts as the arm or leg."

Vivisection is suggested in *Coriolanus* by the Queen. When Dr. Cornelius refuses to give her the poisonous drugs she has asked for and demands her reasons for wishing to possess such dangerous things, the Queen indignantly exclaims:

"I do wonder, doctor,  
Thou ask'st me such a question:  
Have I not been thy pupil long?  
Hast thou not learned me how  
To make perfumes? distil? preserve? yea so,  
That our great king himself doth woo me oft  
For my confections? Having thus far proceeded  
(Unless thou thinkst me devilish) is't not meet  
That I did amplify my judgment in  
Other conclusions? I will try the forces  
Of these thy compounds on such creatures as  
We count not worth the hanging, (but none human)  
To try the vigour of them, and apply  
Allayments to their act; and by them gather  
Their several virtues and effects."

—*Cymbeline*, i-6.

Ovariectomy and the age of puberty are mentioned in *A Winter's Tale*, when Antigonus is trying to persuade the King of the virtue of the Queen. He says:

"I have three daughters; the eldest is eleven;  
The second and the third, nine and some five;  
If this prove true, they'll pay for't: by mine honour,  
I'll geld them all: fourteen they shall not see,  
To bring false generations: they are co-heirs;  
And I had rather glib myself than they  
Should not produce fair issue."

—*A Winter's Tale*, ii-1.

Puberty is here placed at fourteen. Even if opening the abdomen and removing the ovaries had never been accomplished before, Shakespeare must have at least contemplated the possibility of the proceeding and fully understood the relation of the ovaries to gestation. Caesarean section is spoken of in *Macbeth*. The latter is fighting with Macduff and is boasting that he cannot be killed by "one of woman born."

Macb: "Thou lovest labour:  
As easy may'st thou the intrenchant air  
With thy keen sword impress as make me bleed:  
Let fall thy blade on vulnerable crests;  
I bear a charmed life which must not yield  
To one of woman born."  
Macd: "Despair thy charm;  
And let the angel whom thou still hast served,  
Tell thee, Macduff was from his mother's womb  
Untimely ripped."

—*Macbeth*, v-7.

Shakespearean psychology is too extensive to be touched upon in a short essay of this kind. The poet has depicted the various phases of madness and dementia so fully and truthfully that the subject is one which would require a large book in order that justice might be done it. Allow me, however, to give two quotations to show that the ante-mortem wanderings which one so often sees were observed and carefully noted by Shakespeare. The first is where Prince Henry, speaking of his father's death-bed, says:

"O vanity of sickness, fierce extremes,  
In their continuance will not feel themselves.  
Death, having prey'd upon the outward parts,  
Leaves them insensible, and his siege is now  
Against the mind, the which he pricks and wounds  
With many legions of strange fantasies;  
Which, in their throng and press to that last hold,  
Confound themselves. 'Tis strange that death  
should sing.  
I am the cygnet to this pale faint swan,  
Who chants a doleful hymn to his own death;  
And, from the organ-pipe of frailty, sings  
His soul and body to their lasting rest."

—*King John*, v-7.

The other is where Dame Quickly speaks of the passing away of Sir John Falstaff, that valiant knight of Bacchus who inspired such love in his companions that Bardolph wishes he were with him "either in heaven or in hell."

"Nay, sure, he's not in hell; he's in Arthur's bosom, if ever man went to Arthur's bosom. 'A made a finer end, and went away, and had it been any christom child;' a parted even just between twelve and one, e'en at the turning of the tide: for after I saw him fumble with the sheets, and play with flowers, and smile upon his fingers' ends, I knew there was but one way; for his nose was as sharp as a pen, and a' babbled of green fields. How now Sir John? quoth I; what man, be of good cheer. So a' cried out God, God, God, three or four times; now I, to comfort him, bid him 'a should not think of God; I hoped there was no need to trouble himself with any such thoughts yet: so 'a bade me lay more clothes on his feet: I put my hand into the bed and felt them, and they were as cold as any stone; I then felt to his knees, and so upward, and all was as cold as any stone."

—*Henry V.*, vi-3.

And now, gentlemen, it only remains for me to hope that the session, upon which we are about to enter, and to which I take great



pleasure in welcoming you, may be a profitable one for you all, and that, instead of drinking sack like the knight to whom we have just said farewell, you may imbibe from the fountain of knowledge that which will stand you in good stead in your paths through life.

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### THE TREATMENT OF FRACTURES.\*

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*By E. S. Allbee, M. D., of Bellows Falls, Vt.*

In looking over the Transactions of this Society I find that there has not been a paper on fractures presented at our meetings for the past twenty years. And as there is no other branch of our profession which causes more uneasiness and that is so productive of malpractice suits I thought best to take the treatment of fractures as the subject of my address. I do not expect to present anything new but by bringing the subject to your attention I hope to bring out a full discussion of the subject. I shall not go into a full description of the several fractures, but I shall take up the more common ones and give my ideas of the treatment of the same.

In fractures of the skull with depression of the bone the treatment, as is well known, is by elevation of the depressed bone. But where there is no indication of pressure I should hesitate about operating.

In fractures of the clavicle in children, or of transverse fractures in adults, I have had no trouble in retaining them in position by the application of a compress over the seat of fracture, retained in position by thoroughly strapping with adhesive plaster. Then with a sling under the elbow, raising the arm and confining with a bandage to the body. But in oblique fractures in adults I have not succeeded well in keeping the ends of bone in good position by this method. In this class of fractures I have had the best results with the late Prof. Phelps' apparatus for the treatment of fractures of the clavicle. Though I have never been able to apply it so a patient could turn a hand spring without injury, patients with it on can be fully dressed, with the arm free, and attend to their business; can in fact use the arm to quite an extent.

In fractures of the upper end of the humerus I treat in the following manner: Make a V-shape pad of absorbent cotton and card board covered with a cotton bandage and apply well up in the axilla. Apply a shoulder cap splint on the outside that extends to the elbow and a short coaptation splint inside and secure each with a roller bandage, or adhesive straps. I prefer the latter because you can remove them more easily. Afterwards confine the arm to the body with a roller bandage and a sling about the neck for the hand completes the dressing. I prefer this to a plaster dressing, for the reason that you can examine the arm at any time without disturbing the parts. I always examine them every two or three days, for the first ten days, to see if the bone is in good position. If it has slipped out of position during this time you can replace it and put your padding in a different place to retain the bone in position.

In fractures of the condyles of the humerus I have always treated them in a flexed position, that is at right angles. But I find the great trouble in that position is to overcome the tendency of the condyles to project forward, which may be overcome by applying a hard compress over the fragments and securing with a bandage, or adhesive straps. Have never tried the method of extreme flexion, but should expect it would give good results.

In Colles fracture, I think the most important thing is the thorough reduction of the deformity, which in some cases is very hard to do. I would advise the use of an anesthetic in all of these cases. After reduction in children and young people the application of a straight posterior splint extending from the elbow to the end of the fingers with a pad pressing on the lower end of the radius and an anterior splint extending from the elbow to the palm of the hand with a pad just above the fracture, will usually give good results. But in elderly people I have seen a good deal of trouble from the fingers becoming stiff with this mode of treatment. In these cases I would advise a splint with a hand piece for them to shut the fingers over.

A splint that has worked well with me is Carr's. It is moulded so that with a little padding it can be made to fit any wrist and leave the fingers free. I always tell a patient with a Colles fracture that there is liable to be deformity, for in a good many cases the wrist looks as if the radius was shortened and

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\*Vice-President's address delivered at the annual meeting of the Vermont State Medical Society, held at Barre, October 11 and 12, 1906.

if, as some authorities claim, that there is a slight shortening in bones when uniting, I know of no way to prevent it.

In fracture of the bones of the hand, or fingers, the great trouble is to maintain extension. The best device that I know of is Scudder's, which consists of a piece of thin board attached to the wrist by adhesive straps and a bandage extending beyond the finger or fingers, an inch, or an inch and a half. Of course when there is only one finger, or one metacarpal bone involved it need not be more than an inch, or inch and a half wide, but where there are two or more broken it is best to have it the full width of the hand. Fasten to the wrist and put a convex packing under the hand. Apply strips of adhesive plaster to the fingers as needed, leaving a loop at the end of the fingers, to which attach a cord. Then put a screw near the end of the board in line with each finger, leaving it projecting enough so you can wind your cord about it. Now fasten your cord to the plaster at the end of the fingers, and by making extension and fastening the cord around the screws you secure a steady extension with practically no loosening. With this splint I treated a compound fracture of the metacarpal bones of the right hand caused by hand being caught between two plates on a lathe that came within one-fourth inch of each other. After adjusting the bones on splint as described, I applied a moist dressing for the first week, or until inflammation had subsided, and as a result secured a very useful hand.

In fractures of the ribs there is not much that can be done more than to apply a tight bandage, or preferably strap the side with adhesive plaster to prevent the movement of the ribs in respiration.

In fracture of the thigh in children have always used the long side splints with perineal band with fixed extension with adhesive plaster attached to lower end of splint with short coaptation splint of pulp or wood. In adults use the weight and pulley with coaptation splints and a long side splint extending from near the axilla to below the foot to prevent the foot from rolling out or in. In fracture of the neck of the femur in the young or middle aged, I have always treated the same as fractures of the thigh, only I do not use any short splints. In the aged, if I use any dressing, I like Hodgden apparatus, which consists of a double inclined plane made from a  $\frac{1}{4}$

inch round iron with a stout piece of cloth attached, bent to fit the leg for the leg to lie in. When this is fitted lay the limb on it and fasten the foot to the bottom with adhesive straps, or clove hitch. Then with two pieces of rope, or cord, on each side, one fastened to the iron rod near the knee and the other a foot or more back, bring the four ends together and attach to a single cord which runs over a pulley inserted in the side of the room high enough so the cord will be at an angle of about 45 degrees, to which apply a weight that will just keep the heel from resting on the bed. This is one of the most comfortable and, I think, secures equally as good results as any other.

In transverse fractures of the leg, if seen early before there is much swelling, I usually apply a plaster bandage immediately, extending from the toes well above the knee. This bandage I split open carefully at the end of a week, so that I can examine the bones to be sure that they are in good position. If not, they can be adjusted and held in position by pads and the plaster secured by a bandage, or, what I like better, several pieces of inch tape with a buckle on one end. But with an oblique fracture of the leg I have not succeeded well with the plaster bandage on account of the bones slipping by, producing a shortening of the limb. In these cases I have got good results by dressing in this way: Have two boards long enough to extend from the knee to just below the heel and from four to six inches wide, according to the size of the limb. After scrubbing and shaving the leg I apply a strip of adhesive plaster two inches wide on each side of the limb, both above and below the fracture, secured by a rubber bandage, leaving a foot or more of the adhesive plaster loose. Then, after padding my boards to fit the limb, I place one on each side of the limb. I then bring the loose ends of the adhesive plaster around the ends of the board and fasten them together with a double cord, through which I put a stick and by twisting the cords, after the old manner of straining up a wood saw, you can get your extension. Then with a long roller bandage applied outside the boards you have the limb thoroughly immobilized. For myself, I like better to use the interrupted bandage to secure the boards, for with them you can examine the limb at any time without disturbing it.

In open fractures of the patella I should



clean the wound, enlarge it if necessary, and wire the parts together. But in a closed fracture I should be slow to operate on account of the danger of sepsis, which is liable to occur and which usually results in a stiff joint, amputating of thigh, or even death. As a closed fracture of the patella is not dangerous to life and as you can usually secure a useful joint by the closed, or expectant plan of treatment, though it takes much longer, I prefer it. And it has been my experience that after a thorough explanation of the two ways of treatment, with the possible dangers from the operation of wiring the parts together, the patients prefer the closed way. My treatment of fractured patella has been, after having the limb thoroughly washed and dried, to fit a back splint to the limb extending from near the ankle well up on the thigh. I usually use for this a pulp splint. When this is applied I put a small compress, usually of adhesive plaster with the adhesive side out, above the upper fragment of the patella. Then with adhesive straps one inch wide and about two feet long, I secure the compress in position and also the leg to the splint by putting the middle of my adhesive straps on the compress and extending down each side and attaching them to the splint. Then with a compress below the lower fragment, with the adhesive strap I fasten the same to the upper, only while I am applying the lower ones I have an assistant stand at the patient's foot and make traction on the bottom of the splint until the fragments are in apposition, when I apply the straps. If the edges of the fragments are inclined to stick up I put a small compress over them and apply pieces of plaster over that. Afterwards I bandage the leg from the ankle to the upper end of back splint. If the fracture is caused by falling on the knee so that there is a contusion of the soft parts, I apply an ice bag for the first few days. But where the fracture is from muscular contractions I have not found it necessary. Having treated quite a number of cases in this way with the result of a useful joint in all cases and with a very small separation of the fragments, I am content to use the conservative method.

In fracture of the lower end of the fibula, I always use the plaster bandage extending from the toes to the knee, being sure to keep the foot well flexed on the ankle. If, as often happens, the internal malleolus is fractured, I

secure that in place with adhesive plaster before applying my plaster bandage.

In compound fractures, unless the blood vessels are destroyed, be slow about amputating, for you can often save a useful hand or foot, even where the soft parts and bone are badly crushed and torn. As an illustration will report a case that occurred in my practice.

The patient, aged 18, was brought into my office one night with a compound, comminuted fracture of the right forearm about three inches above the wrist joint, caused by his sleeve being caught and drawing his arm through and between two three-inch gears. It crushed the soft parts and comminuted three inches of the radius, so that I could pick the pieces out, and fracturing the ulnar in two places about two inches apart. As the radial and ulnar arteries were not injured, rather against the advice of my confreres I decided to try and save the hand. After thoroughly cleaning the parts and removing the loose tissue, I trimmed off the ends of the ulnar and wired them together, which produced a shortening of about two inches. Smoothed the ends of the radius, leaving a space of an inch between the ends, and sewed the skin the best I could. Laid the arm and hand on a wooden splint and applied a moist dressing. Got some suppuration, but after a long time the wound healed and the ulnar united and a hard grisley substance formed between the ends of the radius. Although the arm is not quite straight, or a thing of beauty, he has a hand with which he is able to do all kinds of work. And in several other cases I have succeeded in saving a useful hand, or foot, when it seemed as though an amputation would be necessary.

#### DISCUSSION.

*Dr. J. M. Allen, St. Johnsbury.* I did not hear the paper just given by Dr. Allbee which no doubt has covered the subject of fractures very thoroughly. I don't know why I should have been asked to discuss this subject unless it is because I have had a little personal experience in this line. I know more about the poor ways of treatment than of the good ones, but I do not intend to cast any reflection whatever on my attendants. With regard to the administration of ether, I believe it is impossible to get the best results unless the patient is relaxed by anesthesia. I think the dressing should be put on so it would not be necessary to change it for days or weeks if possible. A great many men take down the dressing and change the position of the bone for they become afraid the bones are not knitting in a proper position. I believe all fractures do the best if put in the proper position at first and maintained there. You should always make the long fragment

approach the short one; never the short fragment approach the long fragment. I was laid up in bed nine months with one fracture and seventeen months with another. The one fracture which was seventeen months in uniting discouraged me for I began to feel that it was never going to unite if I was to be kept in bed. I learned that delayed union was common with men of robust health. Possibly that may not be new to anyone here but I learned that from experience and thought I would tell of it. The subject of fractures is something which has been very interesting to me and I should be glad to hear something more on the subject.

*Dr. C. W. Strobell, Rutland:* I have thoroughly enjoyed this paper of Dr. Allbee's and have absolutely no criticism to offer. I would like, however, to direct the attention of the Society to Moore's method of treating Colles fractures, which is a very simple, but effective way. No splints are used, and the patient is encouraged to use the hand and fingers at once, but, of course, keeping the hand and arm pronated. The limb is meanwhile supported by a simple strip of bandage about the neck, and attached to the ulnar side of the wrist encircled surgeons' adhesive plaster dressing, sustaining from this point the weight of the forearm and hand, which is thus also strongly and persistently pronated. No stiffening or disability results if properly cared for. I have thus far treated eight cases with the most satisfactory results.

*Dr. C. M. Campbell, Rochester:* A year or two since I was called to see a man who had sustained a fracture of both bones of the leg. Another physician had been in attendance and had bandaged it very tightly. I found him suffering a great deal of pain—in fact he was in the most excruciating agony. Had relief been delayed a short time longer, gangrene would certainly have occurred. If splints are applied to a broken limb, the patient should be watched very carefully for the first few hours. With the subsidence of edema plaster of Paris can be used with safety and success and in most instances, especially in fractures of the extremities being superior to all other agents used for fixation. Recently a young man was brought to the office who had sustained a compound fracture of the tibia and fibula. He was seen in about an hour after the accident. There was a clean cut incision which was dressed and splints applied. No swelling occurred and very little pain experienced. In ten days a plaster of Paris cast was applied—a circular door being cut for the dressing of the wound—and now at the end of eight weeks the patient is walking about. The experience with this patient leads me to think that there is less pain following a compound than a simple fracture, owing to the fact that the free drainage allows the escape of the excess of the serum and blood, thereby relieving the extreme pressure. With regard to fractures of the elbow joint and the beginning of passive motion, How soon shall we begin passive motion? Of course, generally speaking, each case is a law unto itself. In a recent fracture of the internal condyle of the humerus in a child of seven years of age—motion was begun at the end of ten days with very good results. I trust this important subject will be discussed more fully and that some of you will give us an account of your interesting experiences connected with it.

*Dr. Allbee, closing discussion:* I find in most cases that by letting them walk around a little that the bones soon begin to unite. I had a case of fracture of both bones of the leg. I put in a plaster paris cast and kept the patient in bed four weeks, when

I found the tibid had not united. I kept him still a couple of weeks more and it did not unite; then I let him walk around for several weeks with no improvement. He then went to Boston and Dr. Dwight treated him six weeks in the same way without getting union. When he cut down on the bone he found some of the tissues between the fragments. In regard to passive movements, I wait until I think the fragments have united before I commence movements of the joints. I think a great many now recommend to commence movement much earlier, even during the first week, but it seems better to me to wait until the fragments are united so they will not move. I should endorse Dr. Allen's idea of putting up a fracture properly the first time, so as not to have to disturb it. I have had two or three cases of delayed union of the leg in which the bones were wired together, and in about six months got union. My personal experience was I had a suit for malpractice. But for some reason or other (possibly because I haven't any money) they withdrew the suit.

## A NEW METHOD OF STAPHYLORRHAPHY.

*By Charles Dalton Fillebrown, M. D., Boston, Mass.*

In studying the anatomical conditions in the throat which are found associated with persistence of speech defects after surgical repair of cleft palate, it is apparent that simple closure of the fissure, although followed by great improvement, is not alone sufficient to restore satisfactory articulation.

If we examine subjects who have been successfully operated upon by methods heretofore in vogue, in whom the nasal tone and imperfect articulation is still noticeable, we find the soft palate united, but instead of being of proper length and flexibility, it is short and tense, and incapable of any degree of movement in response to muscular contraction; or it may be fairly flexible yet lax and motionless, showing paralysis by failure to contract under mechanical irritation of the fauces,—a phenomenon readily observed in the normal throat. Here is abundant evidence that in operating upon these cases we have been led to overlook certain functional considerations and to sacrifice important structures in order to obtain immediate surgical results. While the operation may have rendered speech more intelligible, it is clear that in either instance the condition of the velum will not permit a complete closure of the naso-pharynx, which is absolutely necessary for the proper production of certain sounds.

The method of operating which is followed by these results is in accordance with earlier



teachings, and until recently has been advocated by the leading authorities on this subject. It involves free lateral incisions to relieve any tension, together with division of the palatal muscles whose action tends to draw apart the sutured edges and so prevent primary union.

The necessity of such procedure is pointed out by William Rose of London, in a treatise on harelip and cleft palate published in 1891. Regarding the treatment of the levator palati muscle in the operation for cleft palate, the author states, "—— the division of this muscle is absolutely essential where any plastic operation is undertaken for closure of the cleft." Again, "If the edges of the cleft be irritated, the lateral segment is instantly drawn up and disappears as it were,—an observation which emphasizes the necessity for complete division of the levatores at some period of the operation." In reference to lateral incisions for the relief of tension it is interesting to note his recommendations. "A narrow probe-pointed bistoury is introduced through the lateral aperture on either side and carried directly backward through the soft palate." By "the lateral aperture," he refers to an opening previously made at a point near the last molar tooth through which the levator and tensor palati have been severed. Continuing he says: "It is useful to introduce the left index finger into the lateral opening to ascertain if any fibres of the muscle still remain undivided." Bearing in mind that these incisions pass completely through the soft tissues, a fair idea may be had of the extent and size of these openings, which together with the severed muscles I believe are responsible for some of the unsatisfactory results after operations performed in this manner. As a means of relieving tension and securing immobility of the palate during healing, these measures are unquestionably of value; but when we contemplate the subsequent rigidity of the velum from cicatricial shrinking, or permanent impairment of function from cutting muscles, we feel the need of a method whereby we may more fully restore this organ in its functional as well as structural integrity. Contrary to the usual results of tenotomy in other parts of the body recovery of function cannot be relied upon in the palatal muscles. This is due to delicacy of structure and also to collateral infiltration which binds the severed fibres in an unyielding cicatrix.

Having for many years been associated with Dr. Thomas Fillebrown in this special field of

oral surgery, it has been my privilege to participate in many improvements both in method and technique of palate operations, and I have thus been afforded an exceptional opportunity to study the nature and treatment of this deformity. With a view to avoiding these defects in operated cases I have endeavored to develop a method of operating which permits easy approximation and suturing of the palatal segments without the customary deep lateral incisions, and one which renders division of the muscles unnecessary. In principle this method consists in obtaining membranous flaps by splitting the soft palate into two layers and uniting the anterior or lingual portions across the fissure.

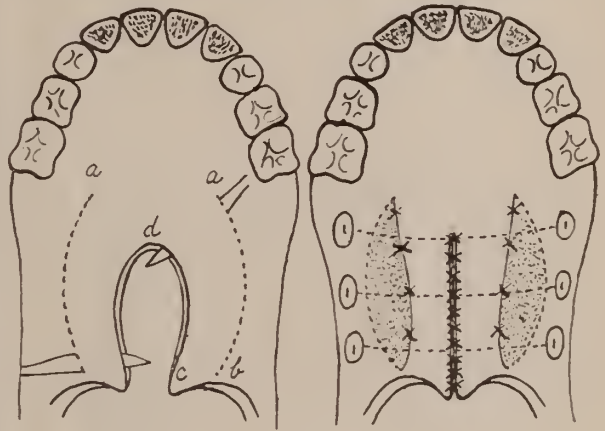


FIG. I.

FIG. II.

Referring to Fig. I, the dotted line on each side, a b, indicates a superficial incision beginning at a point somewhat in front of the apex of the fissure and extending to within a few lines of the posterior pillar. These incisions pass through the mucous membrane only and not through the entire thickness of the palate. They should curve outward, especially opposite the widest portion of the cleft. Having thus outlined the distal borders of the flaps, the knife is carried along the margins of the cleft in such a manner that the edges are split along their whole extent except at the halves of the nola beyond the point c. By carefully dissecting in the plane of the palate from the distal incisions inwards so that the knife point will emerge in the split edge, two quadrangular flaps of mucous membrane are formed, preserving attachments at a d and b c for nutrition. After paring the edges of the nola, omitted in the splitting process, the flaps are drawn together across the cleft and sutured in

the median line, with the opposing edges everted in order to bring two raw surfaces in contact.

The completed operation is represented in Fig. 2. Here the shaded areas indicate the denuded under surface of the pharyngeal layer exposed by sliding the lingual flaps together. In order to guard against any opening through the velum the distal edges are secured to the raw surfaces by several sutures. In the course of healing these denuded parts granulate in readily, leaving no dense scar tissue.

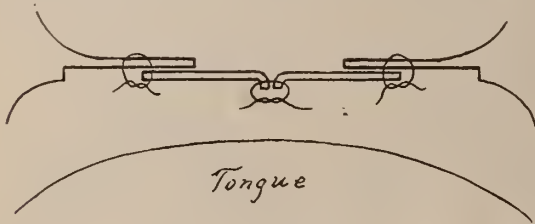


FIG. III.

Fig. 3 is a diagram in section to show more clearly the relation and adjustment of the parts. In dissecting the flaps in this way we avoid much encroachment upon the insertions of the muscles, which are, for the most part, situated in the posterior or pharyngeal portion of the soft palate. To allow for the slight retraction which always takes place, the width of the flaps should be more than enough to close the cleft. Redundancy is a distinct advantage.

In place of dividing muscles to insure immobility, fixation is accomplished by passing wires behind the palate from side to side, and securing them laterally by silver disks. This restricts all movement of the velum and sustains the pressure in swallowing, cleansing, etc. The "splinting" of the palate in this manner is represented in Fig. 2.

It is to be understood that this method is adapted to the clefts of the soft palate only; but when the deformity extends into hard palate, it can be employed in conjunction with the usual method of closing anterior fissures.

160 Newbury St.

One means of great importance in overcoming the constipation habit, is the practice of evacuating at a certain time every day. I think every one can, with a little persistence and care, acquire this most hygienic habit. No one should ever go to his or her daily business until this call of nature has been attended to. It may be necessary for one whose rectum has grown

tolerant of scybalous masses and no longer responds to natural promptings, by reason of persistent, long-continued indifference on the part of its proprietor, to use for a time in addition to diet and exercise some drug, such as the well-known pill of aloin compound with ipecac, to act as a sort of intestinal tonic. But when this or any combination of drugs is used it should be well understood by the patient that they are used only as an aid in the formation of regular habits, to be gradually decreased and finally withdrawn altogether, always to be taken at night and in the least possible dose capable of producing a natural evacuation in the morning, active catharsis at all times being avoided.—*Denver Med. Times.*

**Suggestive Coloring.**—Physicians as a rule do not realize the importance of an attractive appearance in the solutions they prescribe. A writer in *J. A. M. A.* states that carmin or cochineal for red, and glycyrrhizin for brown, are suitable for alkalinne and neutral substances; while cudbear (tinct. persionis) for red, and caramel for brown, are available for mixtures with an acid reaction. Compound tincture of cardamon contains cochineal. Compound tincture of cudbear contains caramel as well as cudbear, and so gives a brownish-red hue. A pleasing yellow tint can be imparted to either acid or alkaline solutions on adding one per cent. or less of tincture of hydrastis.—*Denver Med. Times.*

The National Pure Food law, enacted at the last session of the National Congress, which becomes effective Jan. 1, 1907, requires that every drug or medicine of any description, sold under or by a name recognized in the United States Pharmacopeia, or National Formulary, shall conform to the standard of strength, quality or purity as determined by the test laid down in the United States Pharmacopeia or National Formulary, official at the time of investigation, provided that no drug shall be deemed to be adulterated if the standard of strength, quality or purity be plainly stated upon the bottle, box or container, although the standard may differ from that determined by the test laid down in the United States Pharmacopeia or National Formulary. It is also required that there shall be clearly stated on the label of every drug or medicine the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate or acetanilid contained in the preparation.



## Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the Medical Sciences.*

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### EDITORIAL.

The preliminary education of medical students is a subject of growing importance and at the present time rather overshadows the question of the subsequent education of the medical student. The majority of medical schools require a four year high school course or its equivalent for admittance. The Vermont State Board of Medical Registration requires a four year high school course or its equivalent "which will admit to any New England College without condition." There is a growing opinion that the majority of high schools in Vermont are not qualified to turn out young men able to meet the requirements of this State Board. As a matter of fact there are some New England Colleges that will not admit students without examinations; and on the other hand, there are only ten or a dozen high schools in the state whose graduates are admitted to those colleges which do not require examinations. In view of these conditions one of two things seems necessary, either the standard set by the State Board of Medical Registration

must be modified or the high schools of the State must be brought up to this standard. We do not favor a lowering of the educational requirements for admittance to medical schools, but we do believe that the secondary schools of the State need a thorough "shaking up" and a readjustment of the needs of the times. Along this line, a noticeable thing in the entering class of the 54th session of the University of Vermont College of Medicine, is the large number of students entering with conditions, the proportion being much larger than in recent years. The conditions in some cases are due to a lack of foresight on the part of the student in planning his high school course, but in other cases, it is due to the fact that the high schools do not give the quality or quantity of work necessary. As a matter of fact many "high schools" are such in name only, and it is high time that a standard of secondary school education be established and that all high schools be graded with reference to such a standard.

With the passage of House Bill No. 254, the medico-legal work of the State has been put upon a higher plane of efficiency. This bill is an amendment to Act No. 90 of the Acts of 1900 and provides: (Sec. 2). "If a judge of the supreme court or the attorney general orders an autopsy on the body of a person, as provided under section one thousand nine hundred eighty-four of the Vermont Statutes, he shall therein direct that such autopsy shall be made by the pathologist of the laboratory of hygiene, or under his direction, unless for good cause shown said judge or the attorney general otherwise directs. At such autopsy said pathologist shall take and preserve under proper seal such portions of the body and its contents, together with such other articles as he judges may require subsequent examination in the investigation of the case. For performing this autopsy the pathologist shall be paid his actual expenses, including the expenses of his assistant."

Until recently medico-legal autopsies have generally been performed by physicians living

near the scene of the suspected crime. In many cases these men have had neither the experience or inclination in this line of work to enable them to render the best service to the State in every particular. So seldom are many of our physicians called upon to perform autopsies of medico-legal importance that they are "rusty" in the technique of a thorough post-mortem examination, and are as likely to hinder the pursuit of justice as they are to aid in its establishment. By the provisions of Bill No. 254 the pathologist of the State Laboratory of Hygiene will perform all these autopsies; and by the co-operation of the chemists of the State laboratory, will thus closely relate all lines of expert examinations. On the face of it, this is a very sensible arrangement, and the outcome will be watched with interest by those interested in scientific and legal matters.

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### NEWS AND PERSONAL ITEMS.

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*We desire to make this column of personal interest to all. Physicians are requested to send news items.*

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#### VERMONT.

Dr. K. L. Macleay and Miss Gertrude Sturtevant were married Nov. 3rd, at Newport.

Dr. C. Gordon Abell has been appointed health officer for the town of Enosburgh, in place of Dr. F. S. Hutchinson, who resigned some time ago.

News has been received of the death of Dr. V. D. Rood, of San Diego, Cal. Dr. Rood graduated in 1867 from the medical department of the University of Vermont.

Dr. Charles E. Stone, of the class of 1906, University of Vermont College of Medicine, who has been taking the practice of Dr. J. C. Murphy of Hinesburgh, has returned to his home in South Berwick, Me.

Dr. J. G. Baylor of Pittsford died Dec. 3 from Bright's disease. Dr. Baylor was one of the most promising young men of the profession, being only 34 years of age, and having already established himself as one of the leading physicians in his vicinity. The funeral was held at Washington, D. C.

Dr. B. H. Stone, director of the State Laboratory of Hygiene, Dr. C. H. Beecher of Burlington and Dr. M. R. Crain of Rutland attended the annual meeting of the American Public Health Association, held in Mexico City during the first week in December. Dr. Stone read a paper at the meeting, on "The Relation of Water to Rural Typhoid."

Dr. L. M. Greene died at his home in Bethel, recently, after a short illness from peritonitis, aged 56 years. He was born at Rochester, Vt., and was graduated from Dartmouth Medical School in 1875. Dr. Greene represented the town in the General Assembly in 1894, also as senator in 1904, and for several years has been one of the state supervisors of the insane.

The Heaton hospital at Montpelier has received an appropriation of \$1,000 from the Volunteer Hose company, recently disbanded.

Brightlook hospital at St. Johnsbury, which was opened seven years ago, has proved inadequate for the growing demands of patients and is soon to be moved to a new site, which is on some of the highest ground in the village. The directors have announced that already \$15,000 have been pledged.

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#### NEW HAMPSHIRE.

Dr. William H. Bouser and Miss Edith Pott were married at Dover, November 14, and upon their return from their wedding trip will reside in that city.

The annual meeting of the Rockingham County Medical Society was held at Exeter, November 6th. Papers were read by Dr. William H. Nute and Dr. John G. W. Knowlton of Exeter, Dr. A. C. Heffenger and Dr. E. Henry Thompson of Portsmouth.

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#### NEW YORK.

Dr. Charles J. Shaw of Putnam, and Miss Lottie Robinson of Burlington, Vt., were married December 1. Dr. Shaw is a graduate of the University of Vermont College of Medicine of the class of 1904.

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### THE PREVALENCE OF DISEASE.

At the recent convention of the International Association of Accident Underwriters there was presented a report by a special committee on tabulation of sickness, experience covering 130,918 people, having 37,681,189 days of exposure. This experience covered the



year 1903, which was the latest to be completed in details. It was found that in this group of insured people, largely men, for women are not insured unless wage earners, there were 216,390 days of confinement to the house and 18,008 days of sickness not requiring confinement to the house. Thus it can be seen that of the average business man, about one-half per cent. of his time is taken up by illness, and when he is sick he is confined to the house, for only eight per cent. are reported as not so confined. To the companies on the basis of a five dollar a week indemnity, the cost under these policies was one dollar and forty-nine cents. The analysis of these tables is most interesting; thus, taking one series, there were the following number of days confined per hundred days of exposure:

Ages.	Days.
10-19 .....	522
20-29 .....	572
30-39 .....	643
40-49 .....	778
50-59 .....	1,230

There is a regular progression in the average number of days' sickness per hundred thousand days of exposure with advancing years.

Again when it comes to the prevalence of disease as shown by claims paid, there was paid by all companies claims for typhoid fever to the amount of 33,429 days. Thus typhoid fever is the most prevalent disease for which health insurance is paid in the United States. Next comes influenza with 24,146 days, then pneumonia with 23,447 days, followed by pleurisy with 12,737. Then, curiously enough, comes appendicitis, with 12,609 days of confinement to the house. Bronchitis stands next with 10,244 days. Thus, of prevalent diseases, those of the respiratory tract seem far more prevalent than others. Such standard diseases as cardiac troubles, diabetes, cystitis, diphtheria, gravel, nephritis, and peritonitis are all far below in the list.

Taking the tables for age, it is interesting to note the prevalence of diseases at the various periods of life. Thus, typhoid fever shows its greatest prevalence from twenty to twenty-nine, with 963 days, dropping in the thirties to 743, to 186 in the forties and 28 in the fifties. Influenza, on the other hand, is most prevalent in the forties, while pneumonia is reported in the largest number in the thirties, as is pleurisy.

Appendicitis is also more prevalent in the decade from thirty to forty. Bronchitis, on the other hand, is more prevalent in the "forty year" group, while such diseases as seem more common in old age are found often more prevalent earlier; thus, locomotor ataxia is reported more frequently between thirty and forty than at any other age; gravel, curiously enough, is most frequent in the twenties, and rheumatism in the thirties.

Of course, in one sense, these tables can be misleading, for the average age at which a man insures is generally in the thirties or forties. Insurance, as a rule, of any kind, does not appeal to the young, and it is expensive for the old. But when a man has gotten into the thirties, he is, as a rule, more thoughtful, less likely to take risks, and to have a family dependent on him. Hence, there being more men of thirty or forty insured, naturally more illness is reported from these ages. There may be as much disease in the twenties or the fifties, but these cases are not insured; on the one end the applicant is shy, on the other end the company, for few companies insure for health over sixty, unless the applicant passes a good physical examination.

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#### IMPORTANCE OF MECKEL'S DIVERTICULUM IN SURGERY.

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The importance of Meckel's diverticulum or diverticulum ilei as a cause of acute intestinal obstruction was brought to my attention, by two cases, with the diagnosis of acute appendicitis. Two similar cases, with the same diagnosis by experienced operators in abdominal affections, mentioned in one of the text-books of surgery, prove that it is not possible in all cases of acute intestinal obstruction to arrive at a correct understanding of the etiology without exploratory incision.

The diverticulum ilei may be the subject of either inflammatory processes similar to the appendix, an intra-abdominal cyst, a strangulated hernia, an umbilical fecal fistula, or a cause of intestinal obstruction. On account of the various affections which may result from the presence of this diverticulum, a brief description of the history and anatomy may be of interest.

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\*Read before the Washington County Medical Society.

Lavator first published an account of this remnant of fetal life and Ruysch in 1701 described and named it diverticulum. The credit of calling general attention to the anomaly, advancing the theory that it is the remains of the omphalo-mesenteric duct, and attributing to it certain intra-abdominal diseases, belongs to J. F. Meckel.

About the end of the fourth week of embryonic life in the human fetus the intestine and yolk sac communicate through the abdominal wall, but as soon as this wall closes, the channel of communication is formed by the omphalo-mesenteric duct, a vein and artery. After the sixth week, the duct and vessels wither and are represented by a cord, which in the normal condition undergoes fatty degeneration and disappears. Upon the extent of this change, that is, the location and degree of the atrophy, depends the size and attachment of the diverticulum. In certain cases; the duct may remain open to the umbilicus forming a fetal fistula: in other cases it may be closed at the distal portion in the form of a fibrous cord.

Osler, Mitchell, Quain and Treves in examination of several thousand subjects found this diverticulum present in slightly over 2%. Mitchell found it absent in two hundred successive autopsies and present in the two successive autopsies. Rolleston gives the highest average of 3.37%, while Alber, in an examination of one thousand subjects, gives the lowest average of .1%. That it is of much greater frequency in males is shown by two observers, who in fifty-seven cases, found it present in eleven females and forty-six males. Meckel's diverticulum has been seen attached to the intestinal tract at various points from the esophagus to the cecum, but the location given by Meckel and generally accepted, is from one to four feet from the ileo-cecal valve. The unusual locations of the diverticulum are explained by one writer under the head of developmental lines. The usual attachment of the diverticulum to the intestines is opposite the mesentery, yet it may arise from the lateral portion of the intestine, from a portion of the intestine near the mesentery or may be intramesenteric. The length varies from a small blunt projection to a diverticulum of ten inches. The average length in 109 cases examined by Dr. Lamb was 2 inches. The most common form is tubular resembling the finger of a glove. The extremity has been found hammer-shaped, club-shaped, bifid, branch-like or cord-like. This cord may remain either free in the abdomen or become attached to the ileum, mesentery, ascending

colon, abdominal wall or urinary bladder, and in certain cases the cord may extend from the umbilicus to the mesentery of the ileum. The structure of Meckel's diverticulum is similar to that of the small intestine, having three coats, a peritoneal, muscular and mucous and sometimes may contain Lieberkithn's crypts, solitary follicles and Peyer's patches. Meckel observed a valve, formed by a reduplication of fold of the mucus membrane, at the attachment of the diverticulum to the intestine in three out of twenty cases.

Mechanical ileus may arise from intussusception, twists, knots, hernia, stricture, tumors and abnormal contents, still the most frequent cause is strangulation, occurring in 34% of 295 cases collected by Dr. Fitz and 35% of 1,134 cases mentioned in Ziemssen's Encyclopedia of Practical Medicine.

According to Osler, 70% of the cases of intestinal obstruction due to strangulation occur in males with 40% between the ages of 15 and 40 years; 90% involve the small intestine; 67% involve the right iliac region and 83% involve the lower portion of the abdomen. In the table by Dr. Fitz, of 101 cases of intestinal strangulation, adhesions caused 63, viteline remains 21, appendix 6, peritoneal pouches and openings 3, adherent tube 1, pedunculated tumor 1; thus showing that Meckel's diverticulum or viteline remains formed about 20% of the causes.

Meckel's diverticulum may produce intestinal strangulation in one of several ways: A portion of the intestine may be caught under the diverticulum with a short mesenteric attachment; a long loose cord may form a knot or coil by which a portion of the intestine may become snared; a cord attached to the umbilicus may be stretched by a meteorism binding down a loop of the intestine; either a volvulus of the ileum or a hernia may completely occlude the vessels in the diverticulum terminating in gangrene.

The familiar diagnostic symptoms of acute intestinal obstruction are the violent and sudden onset of abdominal pain, nausea, vomiting, constipation and tympanites accompanied by shock or collapse, usually developing early, with the characteristic picture of mental anxiety and physical distress called "facies abdominalis," forming a group of symptoms described by Gubler as abdominal peritonism. In 68% of the cases of intestinal strangulation referred to by Treves there is a history of previous attacks of peritonitis, appendicitis, tubal or ovarian inflamma-



tion, gastric or duodenal ulcer, typhoid fever with deep ulcer, a blow or injury to the abdomen followed by a few days of pain or tenderness. If there is no such history, the cause may be either internal hernia or Meckel's diverticulum. The latter is the probable cause when the patient presents congenital defects. These defects seen associated with Meckel's diverticulum, according to Kelly, are harelip, cleft palate, insufficient development of the bones of the skull, spina bifida, deficiency of the septum of the heart, ventral fissure, double uterus, horseshoe kidney, double bladder, exstrophy of the bladder, atresia of the anus, club-foot, supernumerary digits, transposition of the viscera, double and triple monsters.

In one of the cases, which recalled the importance of this diverticulum, the patient was a strong, healthy, American male, 48 years of age, without hereditary tendencies and without a history of intestinal disturbance in any form. About forty-eight hours from the onset of pain, nausea and vomiting, which followed an unusually hearty dinner; and when suffering from septicemia with a subnormal temperature, laparotomy revealed thirty-nine inches of gangrenous small intestine, due to a finger like projection three to four inches in length, having a mucous, muscular and peritoneal coat and attached above to the ileum and below to the mesentery of the ileum. Notwithstanding resection of the gangrenous intestine and anastomosis with the Murphy button, the case terminated fatally on the third day after operation. In this form of intestinal obstruction with gangrene, operative treatment, according to Bryant's surgery, saves only 14.6%.

In the other case, the patient was an Italian boy, 13 years of age, with a history of tuberculosis in father and sister and with a record, during the past five months, of four or five attacks of pain in the abdomen, vomiting, constipation and at times slight fever, continuing two or three days. As the symptoms did not subside by the fourth day, operation was advised. The usual appendix incision disclosed the presence of a large amount of bloody fluid in the peritoneal cavity with strangulation of about two or three feet of the small intestine by a fibrous cord extending from a point on the ileum to the peritoneum on the right side of spinal column. Soon after dividing and securing the ends of the cord by ligatures and removing the appendix, the intestine resumed its normal appearance and the wound was closed with the exception of a small opening for drainage. A good recovery followed.

On account of some physicians, who regard laparotomy in acute intestinal obstruction as the last resource, many cases are seen too late for successful operation. All surgeons agree that operative intervention, in order to be successful, must be carried out early and the abdomen opened as soon as the diagnosis is fairly clear. As the danger of delay is much greater than the risk of an aseptic abdominal section, many surgeons consider it better treatment to operate when in doubt. According to Treves operation should be regarded as the first resource inasmuch as it is the only resource. Modern surgery has the credit of reducing the mortality of acute intestinal obstruction from 90% to 60% and it is believed that this result may be improved by early diagnosis with early surgical interference.

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## BOOK REVIEWS.

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ATLAS AND TEXT BOOK OF HUMAN ANATOMY.—A text book of anatomy designed for the use of medical students. By Dr. Johannes Sobotta, Professor of Anatomy in the University of Wurzburg, and J. Playfair McMurrich, A. M., Ph. D., Professor of Anatomy in the University of Michigan. W. B. Saunders Co. Philadelphia. Price in cloth, \$6.00.

This book is especially adapted to the use of students of anatomy, being concise in its phraseology yet sufficiently comprehensive to cover the subject thoroughly. The plates and illustrations, of which there are 320, mostly in colors, are of unusual merit and depict the different structures of the body in a way which render the book valuable as an aid in the dissecting room. The first volume deals with bones, ligaments, joints and muscles.

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A TEXT BOOK OF OBSTETRICS.—By Barton Cooke Hirst, M. D., Professor of Obstetrics in the University of Pennsylvania. Fifth redised edition. Octavo of 915 pages, with 753 illustrations, 39 in colors. W. B. Saunders Co. Cloth, \$5.00.

Hirst's Obstetrics needs no introduction to the medical profession, it having been a standard work for a number of years past. This edition, however, is more complete than the former ones, in that certain sections of the book have been rewritten to a greater or less extent, while others have been amplified by adding such material as would tend to bring the treatise thoroughly down to date. The chapters on puerperal infection and gestational toxemia have been enlarged, yet incorporate only such facts as seem clearly established at the present time.

## AN EPITOME OF CURRENT MEDICAL LITERATURE.

### MEDICINE.

#### X-RAY TREATMENT OF MALIGNANT GROWTHS.

WITHERBEE (*Charlotte Med. Journal*, June, 1906), writes on the X-ray treatment as a preventive of recurrence following extirpation of malignant growths:

The most chronic and least malignant form of epitheliomata is the rodent ulcer, which usually makes its appearance late in life, somewhere about the eye or nose. It is usually first noticed by the patient as a small scab or crust, which soon drops off, only to form again each time the ulcer itself gradually increases in size and depth. This form, therefore, continues in its growth only by continuity and contiguity of tissue, in which case the line of travel of the cancer is infiltrated by cancer cells, invading only the tissues in the immediate neighborhood and not being carried to the glands and various organs of the body by either the blood or lymphatic vessels. Its growth is slow but progressive and will, if not checked, destroy the life of the patient.

The other forms of epitheliomata often start in the various warts and moles, which for some unknown reason generally attributed to chronic irritation suddenly take on a malignant process, which varies much in degree of malignancy; or it may start in an old ulcer as in the case of epitheliomata of the tongue. This form may have secondary deposits in the various lymphatic glands that filter the lymph coming from the part affected. This lymphatic involvement from any tumor or ulcer depends largely on the rapidity of its growth. The treatment recommended in these cases is the use of a paste which may contain any of the deep caustics or escharotics, or treated surgically by complete removal, or by X-ray.

In some of the more chronic and least malignant cases the paste will sometimes remove the condition; however, this too often fails and only sets up an irritation that produces a great activity of cell proliferation and thus lights up a most rapid malignant condition so that the use of another plaster may be practically impossible. In removing cancer we are told by the surgeon to cut wide of the disease, this done it often happens that the disease soon after returns in the same place. Even when specimens are taken from the wound after the tumor has been removed and pronounced normal by the pathologist the disease may return in the scar. This goes to show that the infiltration of normal tissue by cells that may be carried from the tumor and have not yet reached the stage of development which would indicate their character so that one cannot absolutely, even with a microscope, distinguish between a normal cell and a pathological cell.

If the X-ray is used in these cases, especially at the time when most cases are treated with caustics, at least 98 per cent. of them will disappear completely. When exposing the patient to the ray it is essential that the part exposed should extend well out into the normal tissue as well as the diseased area.

Among the subcutaneous variety the ordinary schirrus carcinoma of the breast will furnish the best example. In these cases the first signs of the disease is marked by the patient noticing a small tumor in the lower and outer quadrant which may be discovered accidentally or her attention being called to it by a few sharp pains in this region. The patient

is then referred to a surgeon, who operates immediately. Even with those cases where this most extensive dissection is carried out there are many recurrences.

That the glands in the axia are involved in schirrus carcinoma of the breast is well known, although they may not show any evidence of it for some time. If the condition is not of a schirrus variety, but of more rapid growth and hence softer and more fungating, the glands are involved much earlier. This there fore indicates that the more rapid the growth and softer the tumor the more quickly are the cells liberated from the mass and carried by the lymphatics to the neighboring glands. Suppose then the surgeon in operating on a case of this kind has carried out a most complete dissection and removed the whole mass of glands, breast and tissue as recommended and has kept wide of the disease, only cutting in healthy tissue and then has a recurrence. I believe that the operation at best is crude for this reason. The object of the surgeon in these cases is to remove every cancer cell that is present and he cannot do this until some means is devised to point out just how far the cells have been carried into the neighboring tissues and glands, even though he does not infect his wound directly by opening into the original tumor itself and allowing it to discharge some of its cells into the wound.

Some of these cases do not recur and in those that do recur some time elapses before it makes itself evident, provided the operation has been complete. Therefore, I believe that before long all surgeons will consider a course of X-ray treatment immediately after the operation as essential as the operation in that it will destroy the few remaining cells which cause the recurrence, and in this way greatly increase the percentage of complete cures.

In regard to the time the X-ray treatment should be begun, the patient should be treated on a stretcher the day following the operation. This may seem rather a radical procedure, nevertheless the cells which may be in the open wound or in the adjacent tissue will be more completely destroyed in a much shorter time when the wound is fresh and open than when one waits for union before beginning treatment. *The open wound not only greatly facilitates the direct action of the ray on the remaining cells, but also affords free drainage for all the lymphatic vessels in this region which may be laden with cancer cells.*

It might be said by some that this treatment will interfere with the healing of the wound because the ray would produce a certain amount of endarteritis and thus interfere with the granulation tissue and produce more scarring. Even if the wound was delayed in healing and a larger scar resulting, all of which can be avoided by careful dosage, it is nothing as compared with the recurrence which so often follows.

In cases where radical operation is impossible and the chances of complete recovery are almost nil, the course of X-ray treatment will lessen the discharge, control the hemorrhage and to a surprisingly great extent allay the pain so that the patient during these last hours will be made more comfortable and thus die of exhaustion similar to cases of pernicious anemia and old age, instead of the suffering and agony usually seen in the last stages of this disease.

#### POLYCYTHEMIA.

After referring to the previous literature of the subject W. ENGELBACH and O. H. BROWN, St. Louis (*Journal A. M. A.*, October 20), report in detail, including blood findings, a case of their own observation, the thirty-fifth thus far recorded. They consider that the disorder is a well-established clinical entity,



and that the name polycythemia, while indicating only one of the cardinal findings, is probably as fitting as any. No definite etiology of the disease has yet been established. While tuberculosis of the spleen existed in most of the earlier cases others have since been reported in which this did not occur. While a demonstrable mechanical cause existed in Reckzsch's case, his theory of the stagnation of the blood is not borne out by the other recorded cases. Careful clinical study including analyses of the blood and complete histologic examinations of the bone marrow, spleen, thymus, liver, adrenals and other tissues will be needed to open an investigation as to the etiologic factors causing the pathology. The clinical findings are variable, but cyanosis, splenic enlargement, headache, vertigo and the blood findings of polycythemia without positive obvious cause are common to the majority of cases. The authors give an analytic summary of the usual and occasional symptoms. The course of the disease is progressively bad, though with short remissions, but it may be slow, as in the author's case, in which the symptoms have lasted 11 years. A positive diagnosis is made on the findings above mentioned, but some of these may not be very conspicuous. Cyanosis may not be generalized, and splenic enlargement may be slight. Tuberculosis of the spleen should be looked for. Other conditions causing chronic cyanosis should be excluded. The blood findings differentiate this from all other splenic enlargements, but a good many conditions presenting abnormal increase in the erythrocytes must be excluded, such as those following excessive elimination of body fluids, impeded circulation, anemia, in which a localized polycythemia may exist, syphilis and Addison's disease. The prognosis is bad as regards cure, and the treatment has been very unsatisfactory.

#### ANGINA PECTORIS—TRUE AND FALSE.

True angina pectoris, according to J. M. ANDERS, Philadelphia (*Journal A. M. A.*, Nov. 3), is a comparatively uncommon condition. Its mechanism is as yet imperfectly known, but two facts are generally accepted: 1. In the vast majority of cases it is accompanied with structural changes in the cardiovascular system; and 2, irritation or disturbance of the cardiac sensory nerves exists. He reviews the theories of its etiology and pathology and inclines to accept as probable the explanation of MacKenzie that impairment of the muscular contractility of the heart acts as an exciting cause and elucidates many cases. An impaired nervous vitality must also be looked on as a predisposing cause. "But," he asks, "may there not be added peculiar nutritional or degenerative change in the nervous system, brought about by high nerve pressure, which finds its expression in a peculiar neurosis that serves as the predisposing element in angina pectoris?" Angina *sine dolore* must be accounted for, a condition, the main feature of which is an indiscribable, almost painless, precordial oppression, that is not uncommon, engrafted on a variety of cardiac structural lesions. It shows that there is a distinction to be made between paroxysmal precordial pains and angina pectoris; the essential difference between true and false angina may yet be found in some at present unknown agency, or possibly in the different impairment of the muscular contractility, this being slight in the latter and carried to a dangerous extent in the former. False angina is characterized by precordial pain without the *angor animi* and without gross organic lesions, and it yields to appropriate treatment. Three groups are recognized, namely, the neurotic, the toxic and the reflex. The latter class, Anders thinks, deserves consideration by itself, and the fact that certain contributing factors in true angina are present also in this variety renders it of

special importance. The differential diagnosis between true and false angina is discussed and caution is suggested in making the diagnosis of the latter. Pseudoangina may develop into true angina, and it is safer for the patient to treat it as for the latter in dubious cases. There may be cases of true angina without apparent cardiovascular lesions and in rare cases there may be an impossibility of their distinction. In spite of this and of the etiologic affinities, Anders agrees with Huchard, Osler and others in adopting this provisional classification and separating the functional from the organic forms whenever practicable. True angina is related to the functional forms so far as the vasomotor disturbances are concerned, but it also includes pathologic lesions whose relations to the symptoms are truly obscure and complicated.

#### THE DANGERS OF THE X-RAY.

The dangers from the constitutional effects of the X-ray are very well brought out by D. L. EDSALL, Philadelphia (*Journal A. M. A.*, Nov. 3), and as he says, the lateness of the recognition of these effects is one of the remarkable facts in the medical history of this powerful agent. His study of the subject during the past eighteen months has shown that the rays have effects on metabolism, in some instances most violent, occurring even in normal individuals, and that these are apparently present whenever a general influence is clinically observable. These metabolic changes are due largely, if not entirely, he thinks, to tissue destruction as shown by a relatively large output of uric acid, purin bases and phosphate indicating the excess of nucleoprotein destruction. Histologic studies by Warthin and others show that the organs most affected are the bone marrow, spleen and lymphoid tissues. Edsall says that the effects of a single dose may be more severe than those of a similar dose of any other therapeutic agent with which he is acquainted, and may be either very useful clinically or so dangerously violent as to hasten death or even to cause it where it might otherwise have been avoided. He has known of two deaths from this cause. He thinks we will have to recast our views somewhat; instead of considering the X-ray as an agent only secondarily and somewhat distantly harmful, we should recognize in it an agent as effective as a powerful drug, and one not to be used without good and sufficient reasons and with all needed precautions against its doing any possible harm. The X-ray specialist, moreover, should be fully informed as to all possible contraindications so as to be able to employ reasonable caution in his applications. Edsall compares the X-ray to anesthetics which no one thinks of recommending without due consideration of their possible dangers in any particular case. He mentions two groups of disorders that seem to him to deserve more careful consideration in this connection than others. One of these is nephritis, the other includes patients suffering from any serious degree of toxemia. A possible third group includes patients with decided anemia, especially if combined with toxemia. He believes that there are decided therapeutic possibilities in the action on metabolism of the X-ray, but it must be used with a definite appreciation of its restrictions.

#### PEDIATRICS.

##### CONSTITUTIONAL LOW ARTERIAL TENSION IN CHILDREN.

L. F. BISHOP, New York (*Journal A. M. A.*, Nov. 24), calls attention to a condition observed in children, of constitutional low arterial tension, probably of nervous origin, though the symptoms are circu-

latory. The pulse in these cases would suggest in others the prostration of acute or chronic disease, but the condition is habitual, there are no heart lesions or cardiac symptoms, and the kidneys act normally. The defect seems to be in a lack of the normal back pressure in the peripheral circulation, the blood circulates too easily. To differentiate such a case from cardiac weakness one need only to make a demand on the circulation by active exercise or observe the response in the case of acute disease. Such children suffer much discomfort from lack of circulation, as by cold feet, depression, constipation and skin disorders. They are also subject to catarrhal disorders, but they thrive on active exercise and on every sort of mental and physical exercise that stimulates the circulation. Very hot baths of short duration benefit them, but they do not respond well to cold baths. Though the class is not a large one the cases are sufficiently numerous to be met by every pediatricist. The importance of recognizing the condition lies in placing it where it belongs, and not seeing in it the accompaniment of a supposed anemia or cardiac disease or a sequel of some local disorder. It is a condition that must be met by a proper regimen, and is one that has a tendency to improve or even to disappear after adolescence. Its proper recognition will relieve anxiety on the part of the family physician, it is not a true failure of the circulatory apparatus resulting in an inability to respond to the demands for pressure, nor is it due to the exhaustion from prolonged high arterial tension. This latter, secondary low arterial tension is rare in children. Bishop recommends a careful study of this class of cases to students of the circulation.

#### THE ODOR TEST IN MIDDLE EAR SUPPURATION.

H. GRADLE, Chicago (*Journal A. M. A.*, Nov. 24), calls attention to the value of the odor test as a guide in the conservative treatment of ear disease. If the odor quickly disappears with washing out with water, followed by boric acid applications, the disease is evidently superficial and requires no operation. Even when small areas of caries exist this treatment may sometimes suffice, though perhaps more time or some modification may be needed. When irrigation followed by boric acid applications fails to remove the odor within a few days it is useless to continue it. Intratympanic irrigation will occasionally succeed in dislodging pent up pus or retained epidermic scales, whereon the odor disappears and the now accessible focus of suppuration heals, but not very often. In a certain number of cases the suppurating source is so inaccessible that these methods all fail to remove the odor of decomposition. The only successful conservative treatment for these cases in Gradle's hands has been careful tamponing with gauze, introducing narrow strips of good absorbent gauze, after proper cleansing, into actual contact with the source of the pus as far as it is visible. The efficiency of the method depends upon the dryness of the gauze and hence its frequent replacement. The improvement is slow, it is never less than three weeks and often over six, before the gauze remains dry. The odor may persist till there is absolutely no secretion or it may cease when it has been reduced to a minimum, when suppuration often ends within a few days. Treatment by gauze drainage ends in a complete cure (50 per cent. of cases), partial cure (33.3 per cent.) or failure (16 per cent.) If properly done tamponing does not distinctly lessen the discharge within three weeks, and continue to reduce it, no ultimate benefit can be expected and operation only will succeed. As partial cures Gradle reckons those cases in which the drainage removes the odor but fails to stop completely the suppuration, a trace being

left. He hesitates to recommend operation in these cases of partial success. With due care the patients get along without serious consequences, and in his experience, the disease has lost its progressive and hence dangerous character when the odor has disappeared.

#### PARTIAL HUMAN MILK FEEDING.

F. P. DENNY, Brookline, Mass. (*Journal A. M. A.*, Dec. 8), advocates the use of small quantities of human milk, added to the diet of artificially fed infants, and describes the method used in the Massachusetts Infant Asylum, where for some years it has been the custom to employ a few wet nurses to nurse the children suffering from infantile marasmic disorders alternating with their own children. It has been made probable, he says, by recent investigations that the superiority of mother's milk depends largely on substances which are of the nature of ferments, and the benefits derived from its use do not necessarily depend on the amount given, but may be expected from very small amounts. He reviews the literature of the subject and argues that the benefit from this method of partial human milk feeding is due to a certain extent to the increased bactericidal property of the blood, and while there is a good deal that is obscure in the mode of action, there is enough to justify a working hypothesis, and the experience in the institution mentioned bears this out. Atrophic infants and those suffering from some infection often show prompt improvement from such alternate nursing, even though not enough has been taken to rob the wet nurse's own child, which Denny thinks is never justifiable. Of course the condition and health of the wet nurse, as well as of the infant, must be carefully considered. It is not claimed that small amounts will accomplish what larger ones would, but only that much good can be done in this way. Good results are obtained by the addition to the infant's diet of from 2 to 5 ounces of human milk a day, and it is unjustifiable, he thinks, to keep babies in the hospitals unless a sufficient amount of breast milk is added to their diet to make them resistant to hospital infections.

#### SODIUM CITRATE AS A MODIFIER OF COW'S MILK.

The chemical action of sodium citrate as a modifier of cow's milk is discussed at some length by J. W. ENGLAND, Philadelphia (*Journal A. M. A.*, October 20), who gives it as his opinion that sodium citrate, which is a neutral salt, has no decomposing action on casein calcium in the cold, and that, when the citrated milk is brought in contact with the gastric juice, the sodium citrate is decomposed into sodium chlorid and free citric acid; and that the sodium chlorid has more important physical and chemical properties in the digestion of cow's milk than has hitherto been suspected. He considers it very doubtful whether the free citric acid has any more important therapeutic value than the hydrochloric acid of the gastric juice stimulated in production by the presence of the sodium chlorid. The article is illustrated.

#### PHARMACY.

##### DISPENSING VERSUS PRESCRIBING.

M. H. FUSSEL (*Journal A. M. A.*, Dec.), discusses the question of physicians dispensing their own medicines, assuming that the physician is near a reputable pharmacy. Of course the country physician has no other recourse and Fussel's statements do not apply to him. Fussel finds that it can not be said to be for the benefit of the patient. Physicians can not



well put up prescriptions suited to all cases. They have neither the necessary skill nor time for such work. The tendency is to make the patient come often for renewal of his medicine, and as a physician can not keep everything that the patient needs in stock, there is a constant practice of substitution. While dispensing medicines may increase the number of the young physician's patients, it does not necessarily make a profitable practice in the long run, and it leads to careless habits in studying and diagnosing cases. A prescription is a formula adapted to a special case and helps a man to become less routine and to rely less on ready-made formulas. To summarize, he says: "Dispensing often gives to the patient drugs unfitted for his case, at greater cost to himself than if he obtained them on prescription. It helps to make it easy for the physician to become routine and to neglect the proper study of his cases. It ruins the druggists in the neighborhood and leads them to become nostrum vendors."

#### THE NATIONAL FORMULARY.

C. LEWIS DIEHL (*Journal A. M. A.*, Dec. 1), declares that in the pursuit of his calling the well-equipped pharmacist is required to keep in stock and to preserve in useful condition an innumerable variety of drugs and chemicals in order to meet the demands of the physician. Each revision of the Pharmacopeia has excluded an ever-increasing number of preparations, both simple and "poly-pharmaceutical," which have been persistently prescribed, notwithstanding the uncertainty of their composition and the apparent differences existing between some of those supplied under identical names. Prof. Diehl discusses the attitude of the national formulary toward preparations with fanciful names and says that, leaving out of consideration of modern synthetics, which are a host in themselves, and are taken care of by the Council on Pharmacy and Chemistry, there is a large number of preparations, exploited under brief fanciful titles, which consist of simple drugs or chemicals, such as are on the shelves of every pharmacy, and uniformly obtainable in a condition of acceptable purity, in the form of pills, capsules, tablets or powder; others that are simply solutions of one or more salts, for which exceptional purity is claimed; and all of these claimed to be products resulting from the application of prolonged investigation, diligent study or unusual facilities and skill. The attention of physicians, he declares, is invited to pharmaceutical compounds of an intricate nature, compounded from drugs of "rare quality" or representing the "essential principles" of this, that and the other drug—the quantities, if given, pertaining to the drug, but not to the "essential principle" involved—the development of which has required years of study, or which are the outcome of vast experience, not to speak of occult divination, and so on *ad nauseam*. Professor Diehl advises physicians instead of prescribing proprietaries to order national formulary preparations by writing N. F. after the names of preparations for which formulas are given in that publication.

#### SURGERY.

##### FRACTURES OF THE PATELLA.

J. RANSOHOFF, Cincinnati (*Journal A. M. A.*, October 13), considers that conservative methods are logically to be reserved for cases in which the damage is largely limited to the patella. Absence of evidence of large diastasis and crepitus would speak for non-interference, and he thinks that fractures with-

out marked displacement of the fragments are probably more common than is generally supposed. The integrity of the lateral expansions of the quadriceps tendon is important in this connection, and he says that the ability of the patient to extend the leg or to lift it with some little assistance within a few days of the injury, might, in his judgment, be invested with the dignity of a pathognomonic sign of an intact capsule. Its presence with many patients and most surgeons should militate, he says, against operative interference, beyond aspiration of joint exudates. If non-operative measures are adopted, two factors are essential to a good functional result: First, aspirate the joint as soon as feasible; second, within ten days or two weeks, massage and passive movements should be made, and retentive dressings used only when the patient is able to go about on crutches. Only in this way can atrophy of the thigh, which is the almost constant sequel of a broken cap and menace to the other patella, be forestalled. The chance of operation succeeding after conservative methods have failed, he considers very slight. The danger of operation is fully recognized, but Ransohoff holds it justifiable and necessary, when conditions point to an extensive involvement of the capsular expansions beyond the patella, provided always that proper skill and good environment are at command. Details of his method of operating are given. In conclusion he sums up in substance as follows: 1. Fractures of the patella are often partial and subperiosteal and call for no operative treatment, even if recognized. 2. A master of aseptic surgery may operate in every case of fractured patella in which separation of the fragments can easily be recognized. 3. When the lateral expansions of the quadriceps are involved, the indications for operation are plain, unless contraindicated by age, impossibility of securing perfect asepsis, skilled assistance, etc. 4. The proper time for operation is the first week. 5. The operation ordinarily indicated is the open operation with suture of the lateral tears and fixation of the fragments by one or other method. 6. In old standing cases with a very wide diastasis of the fragments, excision of the latter with suitable tendon plastic will probably give better results than bone suture. 7. The knee joint will always remain a most dangerous field for operative interference by any but skilled surgeons, and should be a forbidden region to him who only occasionally does surgery. To him a fracture of the patella should be *anoli me tangere*.

##### OPERATIONS ON UTERINE APPENDAGES.

W. P. MANTON (*Journal of Obstetrics*, July, 1906), gives figures of end results in one hundred cases of conservative operations on the uterine appendages. The following operations were done: Both ovaries were resected in 17 cases; right ovary in 26 cases; left ovary in 13 cases. Puncture of both ovaries was done in 22 cases; right ovary in 8 cases; left ovary in 14 cases. In 19 women one ovary was removed entirely. Resection was done in both tubes in 13 cases; the right tube in 4 cases; the left tube in 9 cases. One tube was removed in 10 patients; the opposite side being left untouched or resected. In the 100 cases there were no deaths and the immediate results were entirely satisfactory. The majority of the cases remained under observation at least three months. Following this period of time 61 were known to be well at the present time; 31 had been lost sight of; 5 were doubtful, complaining of pelvic pain referable to the resected ovary, but in which no change could be detected on examination; and 3 had required a second operation for the removal of the conserved organ, which had undergone in each instance further cystic degeneration. Of the 64 mar-

ried women, 55 or 85 per cent. and of the 30 single women, 23 or 75 per cent. were well a year following operation. Of 41 married women located one year after operation 6, or 14 per cent. subsequently became pregnant and 4 of them were delivered at term. From these facts the author concludes that the conservative surgery of the ovaries and tubes has passed the experimental stage and has established itself as a legitimate and successful operation in all the conditions to which it might be properly applied, and that it should be the operation of choice in all instances during the child-bearing age, where the diseased state of the organs admitted of its employment.

#### GASTRIC AND DUODENAL ULCERS.

The questions as to the surgical procedures needed in gastric and duodenal ulcer are discussed by W. L. RODMAN, Philadelphia (*Journal A. M. A.*, Sept. 15). In case of perforation of subperitoneal abscess, there is no question as to the propriety of prompt operation; in hemorrhage there is room for difference of opinion, under certain conditions of the ulcers, etc., and there may be a still greater variance of opinion between surgeons and internists as to the management of non-perforating, non-hemorrhagic ulcers and their subsequent adhesions and other complications. Perforation is considered by Rodman under three heads: The acute, subacute and chronic. By subacute perforation is understood cases in which extravasation into the abdominal cavity does not occur, or only to very limited extent. Chronic perforation is the more insidious process in which a plastic exudate limits the extravasation and a subphrenic abscess results. Drainage by the abdominal, lumbar or transpleural route, according to the surgeon's preference and the needs of the case, is the proper treatment. Rodman believes, from the evidence of autopsies, that acute and subacute ulcers are much more common than was formerly believed, and that many cases must be latent and unrecognized. Duodenal ulcers are far more common than we have hitherto thought and in the Mayos' experience are practically as common as gastric ulcer. Rodman does not favor excision of the ulcer when found, preferring to infold the perforation with a few Lembert sutures and using an omental plug when possible. Only when the infolding interferes with the pyloric passage would it seem best to perform gastroenterostomy. If suturing, excision, resection or pylorotomy are all impracticable on account of necrotic tissue or bewildering adhesions, a tube should be placed in the bowel, distal to the perforation and brought out of the stomach as in Witzel's gastrostomy. While the mortality of operation for perforation has been high—something over 50 per cent.—he thinks that with early diagnosis and prompt operation it ought to be reduced to 15 or even 10 per cent. Hemorrhage is estimated by him to occur in 50 per cent. of all cases and will be lethal in about 16 per cent. of these. With acute ulcers it is not recurrent, as a rule, and is usually recovered from. Surgical intervention is not needed and hot water (temperature of from 120 to 130 F.) is the best remedy. In chronic ulcer, hemorrhage is essen-

cases his opinion was that the cholecystitis was secondary to the appendicitis. In two of the gallstone operations acute infection was present and the appendix was not examined. One of these patients is well, but the other complains of abdominal symptoms and has tenderness over the appendix. In the remaining 46 gallstone cases the appendix was normal only in four, and in 34 of the others the history was plainly suggestive (and in some of them definite) of former appendicitis, dating back ten or twelve years. He reviews the evidence pointing to the origin of the infection causing gallstones, and deduces the probability of chronic appendicitis furnishing the germs through the blood stream. If the liver, through its inefficiency or from the number and virulence of the germs, is unable to dispose of them, and some of them are continually escaping into the bile stream, disease of the bile passages might occur. While this route is not definitely proven, it appears theoretically and clinically probable. Hence he concludes that the disease of the appendix should be kept in mind in every gallstone operation. The appendix should be inspected when possible and should by no means be considered normal on account of the absence of periautomatic changes. Unless Sheldon's experience has been altogether exceptional, he thinks that those who follow the above advice will be impressed with the frequent coincidence of appendicitis and gallstone disease, and that if the combined operation is done more frequently the results will be more permanent and satisfactory.

#### HAND DISINFECTION.

BOLDT (*Med. Review of Reviews*, Vol. XII, No. 6) details a series of experiments with the methods of hand sterilization now in vogue and gives his conclusion, namely, that Furbringer's method (hot water, alcohol and mercury bichloride) yielded only 0, 9, 10, 37, 40, 50, 64, 65 to 79 per cent. of negative results; Kelly's method (potassium permanganate and oxalic acid) gives wholly inadequate results, and that alcohol possesses a remarkable power of sterilizing the hands far surpassing that of all other agents now in use, but it possesses this power only in proportion as its strength approaches 70 per cent. He then takes up formaldehyd, which proved the most speedy, most penetrating and least harmful of disinfectants. The reason it has not been used for hand disinfection is because all of the solutions available up to the present time are unstable, and the liberated gas is irritating to mucous membrane, hardens and roughens the skin, thus preventing sensibility and favoring infection. Recent experimentation has discovered a process by which all difficulties attached heretofore have been overcome, while it still retains its full antiseptic value, and it is called veroform. In his experiments with veroform antiseptic he obtained 100 per cent. sterility of the left hand and 60 per cent. of absolute sterility of the right hand. The difference can be attributed to the fact that all the persons tested were right handed and they could scrub their left hand satisfactorily, but could not do the same with the right, which condition, of course, could be improved by practice. He advises the following technique as reliable:

1. Each hand should be scrubbed for five minutes with a good soft soap, such as Squibb's, and hot water, which should be repeatedly changed.

2. Then each hand should be scrubbed from three to five minutes with 1½ to 3 per cent. solution of veroform antiseptic, which is two to four fluid drachms of veroform antiseptic to a pint of water, after which the hands, as desired, may or may not be rinsed with sterile water.

#### APPENDICITIS AND GALLSTONES.

Attention is called by J. G. SHELDON, Kansas City (*Journal A. M. A.*, Nov. 3), to the apparent relationship existing between appendicitis and gallstones. From July 15, 1903, to July 1, 1906, he operated on 48 patients with gallstones, and on 7 with appendicitis with cholecystitis without gallstones. In these seven



When used in this way veroform antiseptic offers the best means of sterilizing the hands; it destroys germs and spores more quickly than any other antiseptic, and will penetrate and kill microbes where no other disinfectant can reach. It does not roughen the hands, nor harden the skin, and is unirritating, leaving no unpleasant after effects and in other respects it is more agreeable than the disinfectants now in use.

#### MEDICAL STATE BOARD FEES.

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 Texas—Examination fee, \$15.  
 Utah—Examination fee, \$15.  
 Vermont—Examination fee, \$15; certificate and registration fee, 25 cents.  
 Virginia—Examination fee, \$10.  
 Washington—Examination fee, \$25; certificate and registration fee, \$1.  
 West Virginia—Examination fee, \$10.  
 Wisconsin—Examination fee, \$10; certificate and registration fee, \$5.  
 Wyoming—Examination fee, \$25.

—*State Board Journal.*

HOW TO MAKE CASTOR OIL PALATABLE.—The *Denver Medical Times* counsels admixture with an equal volume of glycerine, and flavoring with a drop of oil of peppermint, anise or cinnamon. The capsules of castor oil are now an excellent method of administration. Where there is no prejudice we suggest putting first about a tablespoonful of whiskey in the glass; and then pouring the oil, being careful not to let it touch the sides of the glass, into the midst of the whiskey. Thus may a dose of castor oil be rendered palatable, and even pleasurable.

OUR SURGICAL BRETHREN are doing great things these days if we are to believe everything we read in the lay press. For instance, Prof. Gasse, of Breslau, has been transplanting blood vessels and organs from one body to another. In the case of a four-year-old urchin, parts of his mother's thyroid was transplanted to his spleen. The child, after nine months, is developing, mentally, and can walk and talk. "The operation is simple," the reporter assures us. In another case Gasse removed vessels two and one-half inches long from a live animal and transplanted them, as also blood vessels from animals that had been dead for an hour and a half to living animals. While, in human beings, it is impossible to transplant large blood vessels, they can be taken from freshly amputated limbs and transplanted to subjects from whom large tumors have been removed, or in cases where ligaturing large blood vessels has threatened the parts supplied by them with tissue death. Gasse has also transplanted kidneys from one animal to another, the replanted organ performing its functions perfectly. We await corroboration in the usual professional channels.—*Med. Times.*

## SOCIETY MATTERS.

### MINUTES OF NINETY-THIRD ANNUAL MEETING OF THE VERMONT STATE MEDICAL SOCIETY, HELD IN BARRE, OCTOBER 11th AND 12th, 1906.

(Continued.)

M. D. Crain presented a report as delegate to the American Medical Association meeting at Boston, which was accepted.

The meeting of the American Medical Association at Boston, June last, was probably the most successful one ever held. The attendance was the largest in its history.

The papers read in the various sections were of a high standard and the profession of Boston deserve great credit for the royal manner in which they entertained the members of the Association.

It was the first time in a quarter of a century that the reunited profession of the Empire State was represented in the Association, and the leaders of both factions deserve great credit for the tact and concessions that they made to accomplish the results.

Many of the able men of the profession, who formerly were antagonistic to the Association, have been active and efficient members during the last few years, and at no time, although there are some dissenters, as there always are, has the profession been as united as at present.

The House of Delegates, as the legislative body, is a great advantage over the method of transacting business in general sessions and there is no more talk of ring rule than there was years ago under the old unwieldy method.

There were hot discussions and some feeling in the House of Delegates, some of it of a personal nature, but differences were settled when matters were explained and before adjournment there was the best of feeling. Some prominent medical journals that have had their circulation reduced by the competition of the *Journal*, with its rapidly increasing circulation, and have been hard hit in their income by the crusade of the *Journal* against the secret nostrum evil, have claimed that the Association was under ring rule and its business was grossly mismanaged and insinuations of graft, etc.

We can not be too vigilant in safeguarding the financial interests of our Association, when we consider that its assets are about a quarter of a million dollars and the *Journal* has a circulation of about 47,000.

There was nothing brought out in the House of Delegates to show that the business of the Association was not carried on in an honest and efficient manner, and I advise the members of this society to study the trustees' and auditors' reports, published in the June number of the *Journal*, instead of being influenced by the insinuations of graft, etc., by medical journals that are subsidized by the vendors of secret nostrums.

The obituary of C. C. Smith of Gaysville was given by L. M. Greene of Bethel.

#### OBITUARY OF DR. CHARLES CARROLL SMITH.

On the 19th day of June, 1906, at his home in Gaysville, Vt., after an illness of five days from pneumonia, Dr. C. C. Smith passed over to the great majority.

Dr. Smith was the sixth child of Ransom and Lydia (Burch) Smith; born in Sharon, Conn., on June 11, 1830, making his age at death 76 years.

His boyhood was spent upon a farm, attending the district school a part of each year. At the age of eighteen he began teaching winters, continuing to work on the farm summers. He attended the State Normal school at New Britain, Conn., one term.

In August, 1855, he entered the Green Mountain Liberal Institute at South Woodstock, Vt., and remained there about three years. In the spring of 1859 he entered Middlebury College and graduated with his class in August, 1862, having been out of college part of the time engaged in teaching. On Aug. 30, 1862, he enlisted as a private in Co. E, 14th Regiment Vt. Volunteers, served at the battle of Gettysburg July 1, 2 and 3, 1863, and was in several other battles. In the battle of Gettysburg his regiment held the center of Stannard's brigade. He was discharged from the U. S. service upon expiration of his term of enlistment at Brattleboro, Vt., July 30, 1863.

After recovering from an attack of typhoid fever contracted in the army, he began the study of medicine in Burlington, Vt., as a student of Dr. Walter Carpenter, and graduated from the medical department of the U. V. M. in June, 1865.

Soon after graduation he entered the Citizens' Hospital at Flatbush, L. I., as one of the medical staff. In May, 1866, he settled in the practice of medicine in the village of Gaysville in the town of Stockbridge, Vt., remaining there until the time of his death. He held the office of selectman several years, member of the school board, superintendent of schools, and was a member of the county board of education at the time of the change from the district to the town system. He represented the town in the State Legislature of 1872 and 1884, and was State senator in 1890. Was member of the board of United States pension examining surgeons at Randolph, Vt., at the time of his death, the position to which he was appointed in 1897. At the time of his death he was also a member of the Vermont State Medical Society, the White River Medical Association, and the National Association of United States Pension Examining Surgeons, and of G. A. R. Post Daniel Lillie, No. 61, of Bethel, Vt., of which post he was first commander. Dr. Smith married Miss Lurena Perry of Hancock, Vt., at Brattleboro on Oct. 17, 1862; three children were born to them, one of whom, the eldest, a son, died at the age of four years, the other two, daughters, with their mother surviving him.

The doctor was a scholarly man, a deep thinker, and a close observer. His opinion and counsel were widely sought in matters of general interest as well as professional. He was successful as a practitioner of medicine and left his family financially comfortable. As a citizen, neighbor and friend, to know him was to respect and love him, and his memory will never fade from the minds and hearts of those of us who knew him best. It was my good fortune to live as one of his nearest neighbors of the medical profession for thirty years, and from my intimate acquaintance and association with him can truthfully say that his was a kind heart, a sympathetic nature, a noble, honorable, intelligent mind. In his death his family lose a loving and devoted father and husband, the town an influential and respected citizen, and the medical profession a loyal, true and successful member.

The funeral was from his late home in Gaysville, and the Universalist church of that village, the Rev. V. I. Mack of the Universalist church, assisted by Revs. Day and Wells of the Congregational and Methodist churches, attending, the G. A. R. Post performing the ceremony at the grave, which is in Mount Pleasant cemetery in Stockbridge.

Adjourned at 11:45.



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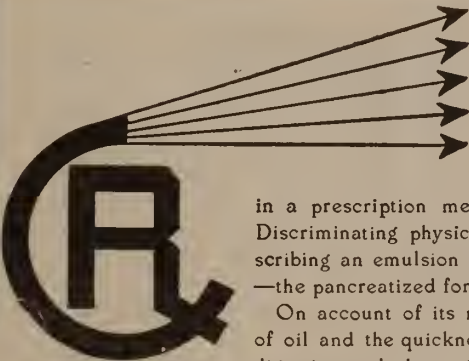
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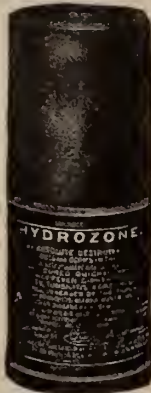
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**MELLIER DRUG COMPANY**

**ST. LOUIS**



# Vermont Medical Monthly.

Official Organ of the Vermont State Medical Society.

Vol. XII, No. 9.

Burlington, Vt., September 15, 1906

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exhaustion, lack of digestive  
vigor yields most quickly to

## GRAY'S GLYCERINE TONIC COMP.

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*An effervescent tablet of Cystogen ( $C_6 H_{12} N_4$ ) 3 grains and Lithium Tartrate 3 grains.*

*Uric acid solvent and alkaline urinary antiseptic.*

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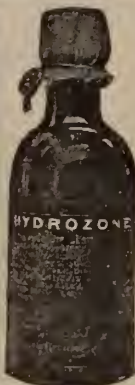
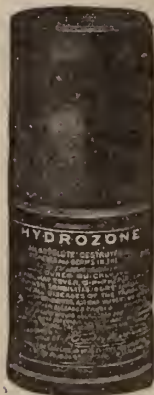
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to the only sane medical treatment of all those forms of dyspepsia associated with a deficient gastric juice and an enfeebled gastro-intestinal musculature, is found in such remedies as tend, by their stimulative action on the digestive glands and muscles, to re-establish their normal physiological activity.

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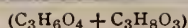
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In feeble old age and in all cases of chronic weakness Colden's Liquid Beef Tonic, when administered in doses of two tablespoonfuls ten minutes before each meal, acts as a therapeutic crutch. It supports and uplifts the enfeebled organism by increasing the activity of the nutritive processes.

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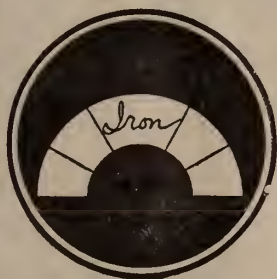
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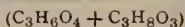
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